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ARTICLE I.

ON THE LYMPHATIC SYSTEM. By W. GODFREY DYAS, F.R.C.S.
(Read before the Chicago Medical Society.)

Some years have now elapsed since I had the honor of reading before the Physical Society of Dublin, then existing, a paper on the subject which this evening will occupy our attention. On that occasion none could foresee all the light that has since been shed on a subject that still requires further illumination. To the microscope and chemistry are we indebted for many advantages not enjoyed by those who preceded us, though they brought to the task of investigation minds of a superior order, improved by discipline and culture. Yet with all the aid we have derived from advanced science and art, much remains for future investigation. Before I proceed to the consideration of the diseases of the lymphatic system, it may not be uninteresting to pass rapidly in review the opinions of former inquirers, as well as these of

more recent times, regarding the anatomy of this system. And as we take a retrospect of the past from the fancied eminence we now occupy, we must not suppose the survey presents nothing but a barren and unprofitable scene; although we must acknowledge that our ignorance still of some of the more important points of lymph, its vessels and glands in a state of health, serves as an obstacle to any very extensive pathological inferences. Under the Ptolemies, in Egypt, the first discovery of the chyloferous vessels was made by Erasistratus. In the vivisection of kids he observed them, and mistook them for arteries. Hierophilus, an anatomist also of the Alexandrian school, saw them. He traced them from the intestine to their termination in the mesenteric glands, and concluded they belonged to the venous system. The existence of this portion of the lymphatic system was tacitly acknowledged by men of science, although uninformed with regard to its office until the time of Galen, who opposed the hitherto received opinions of the Alexandrian school. He omitted the necessary condition of vivisection, not being aware that chyle flowing along its vessels so as to present its milky hue, must be seen, if seen at all, during digestion, and at the moment of opening the abdomen of a living animal. From physiological considerations, based on the fact that the general system was supported by the ingesta of the digestive apparatus, and by the additional fact of the diameter of the tributaries of the vena porta far exceeding that of the corresponding arteries, Galen constructed a theory, which, unlike most of our theories, prevailed for fourteen centuries. He supposed that the nutritive fluids were drawn from the surface of the intestines by the radicles of the mesenteric veins, which carried them to the liver, whose special office it was to convert them into blood. Thus until the sixteenth century this theory held undivided sway, and by the authority of the promulgator, in addition to its plausible simplicity, paralyzed the efforts of future investigators.

At length, in 1532, Massa and Gabriel Fallopius, of Pisa, discovered lymphatic vessels—the former those of the kidneys, though he could not trace them to their origin or termination; the latter those of the liver, which he followed to their termination in their glands. In a few years subsequently Eustachius

discovered the thoracic duct in the horse, and though having followed it in its course along the spine and through the diaphragm, he acknowledged that *there* he lost sight of it, and could not say how it terminated. None of these inquirers knew what were the functions of these vessels; and matters thus remained until Aselli again saw the chyliferous vessels, remarked the similarity of their contents to those on the surface of the intestine during digestion, and inferred that these vessels were the absorbents of the chyle. He was aware that they traversed the glands, but supposed they ultimately terminated in the liver. Though he denied absorbent power to the radicles of the portal system, he believed in the elaborative functions of the liver in the conversion of the chyle into blood. Hitherto anatomists relied on the dissection of the lower species of the mammalia for what they advanced respecting the lymphatic system, but in the early part of the seventeenth century Gassendi, for the first time, saw in an executed criminal the lacteal vessels.

The next link in the chain of discovery was added in 1649 by Pecquet, who traced the connection between these vessels and the thoracic duct, and saw that the contents of this duct passed uninfluenced by the liver in their course to the subclavian vein. Subsequent investigation showed that the lacteal vessels were but a part of an extensive system of vessels, spread over and through the body, and all having the same absorbent function. In 1649 the lymphatics of the liver were discovered, together with their connection with the thoracic duct; and in 1651 Rudbeck discovered lymphatics in the pelvis, thorax, and in the lungs. In short, so fortunate was he in his researches that he felt justified in establishing his right as the discoverer of an independent vascular system. It was in 1787 that Mascagni published his great work, entitled, "*Vasorum Lymphaticorum Corporis Humani Historia et Iconographia*," with plates of this system. During the previous year Cruikshank published his work in London, "*The Anatomy of the Absorbing Vessels of the Human Body*." About the same time Jno. Hunter directed his powerful intellect to the elucidation of its functions, concluding that it *exclusively* presided over absorption. This for many years was the prevailing doctrine, till Magendie in France, and Tiedeman and Gruelin in

Germany, proved by the most convincing experiments that the lymphatics were *not* the sole instruments of absorption, but that the venous system participated in this function. In 1833 Panizza, for the first time ("Osservazioni Sulle Vasi Linfatitici, Pavia;" and at the same time appeared Formann's work, "Mémoire Sur les Vaisseaux Lymphatiques, Liège"), demonstrated the networks from which arise the lymphatic vessels—a wonderful triumph of art! For from the anatomical arrangement of valves in the lymphatics of man, which are comparatively strong and remarkably numerous, it was found impossible to reach these networks by injection indirectly from the trunks, and it therefore required the most delicate instruments in the hands of experienced manipulators to directly inject the network itself.

This has been done perhaps more successfully by Sappey than by any other anatomist. He has most satisfactorily shown how unequally distributed this system is—has incontrovertibly demonstrated how many anatomists have been deceived, supposing they had injected a network. when they had forced the fluid of injection, or mercury, as it might be, into the cellular tissue, and imagined they had succeeded in filling the lymphatic capillaries of the tissue. He remarks that this occurs by not having the instrument for injection sufficiently fine in the point, and also by passing it in too deeply. Owing to these two errors, the capillaries of lymphatics, of veins and arteries, are opened and the mercury may pass, he says, into each of these orders of vessels, and even penetrate the cellular tissue.—"It is extremely rare, however, for the metal to pass into the arteries, but it is frequently seen entering the veins." Now, it must be remembered how a subcutaneous lymphatic network lies relatively to the capillary system of blood-vessels—always superficial to it. This fact in a pathological sense is a matter of importance to know, for I hope to show that a network may be affected by diffuse inflammation without the underlying capillary system of blood-vessels being to the same extent necessarily involved in the affection.

This arrangement of the lymphatic vessels being superficial to the capillary system of the blood-vessels, is the rule as regards the cutis and such mucous membranes as have a pavementous ep-

ithelium. Where the epithelium is cylindrical, the sanguineous network is superficial. This latter arrangement is well marked in the villi of the small intestines, where the chyliiferous vessel in the center of the villus is surrounded by a network of minute capillaries of the sanguineous system. Whereas, the mouth, pharynx and œsophagus present a pavimentous epithelium and a lymphatic capillary network superficial to the sanguineous network. Again, the stomach is lined by a cylindrical epithelium and the vascular network of blood-vessels is superficial to the lymphatics. So far, I am unable to find an exception to this arrangement as a general rule, unless that which obtains in the lungs, where in the bronchioles and cells the vascular network is separated from the atmosphere by an extremely thin layer of pavimentous epithelium. (Bert.)

Should we attempt to carry our inquiries to the source of these networks, we trace them to radicles most difficult to see, even by the aid of the microscope and nitrate of silver injections. In the villi of the small intestines they are more readily seen than elsewhere, and as there they end each in a cul-de-sac, we infer the nutritive juices enter them by endosmosis. It is now a well ascertained fact that they do not commence by open orifices on the surface of the mucous membrane of the intestine. Brucke, of Vienna, in his work, "Ueber die Chylusgefäße, und die Resorption des Chylus," insists upon there being no proper wall at the base of an epithelial cell of a villus of the small intestine—that there is merely a kind of border circumscribing the orifice, which is habitually closed by a mucous plug, and that through this plug fatty matters enter the chyliiferous vessel. The difficulty now would be, how to get out of the epithelial cell; but Brucke maintains the apex of the cell is pierced with an opening which permits the fat to reach the sarcodic tissue of the villus, whence it easily makes its way to the chyliiferous vessel; this vessel, according to him, having no proper wall, cannot therefore present an obstacle to its entrance. Wittich, Milne-Edwards and Lambl are disposed to take the same view—which, I need scarcely add, is not entertained by our profession generally. That a selective property exists in the mucous membrane is inferred from the fact that if the poison of serpents or woorara, even in the

slightest quantity, be introduced into the system by wound, the result may be fatal, yet either may be introduced within the alimentary canal and be innocuous. The following experiment made with woorara in 1850, as published in *L'Union Médicale*, p. 125, is to the point:

The gastric mucous membrane of a recently killed animal was adapted to an endosmometer, so that the mucous membrane looked outward and the endosmometer containing sugared water was then placed in a watery solution of woorara; endosmosis took place in between three and four hours, for the liquid rose in the tube and yet contained no trace of woorara, as was ascertained by endeavoring to inoculate with it. If the experiment were allowed to go on for a much longer time, the endosmosis of the poison might occur; but we should then find that the mucous membrane had undergone modification, the mucus and epithelium covering it being altered so that imbibition and endosmosis of the woorara becomes possible. And if, in place of taking a quite fresh mucous membrane we take one that has undergone some change, the endosmosis of the poisonous fluid occurs instantly. It moreover appeared that all mucous membranes of the body, excepting that of the lungs, enjoy this immunity. When the poison was applied to this, the pulmonary mucous membrane, the effects were the same as if the application were made to subcutaneous cellular tissue. This is Kölliker's opinion as given in his work—*Mikroskopische Anatomie*, Band 2d, p. 169. This is the opinion generally held by the best observers, among whom we must rank Dr. Carpenter, whose words I have just now quoted. Now, the readiness with which the absorbents of this last mentioned tissue always receives the poison, as compared with the resistance of all mucous membranes to its reception, excepting that lining the bronchi, proves that the selective power is in the mucous membrane, not in the absorbents; and, moreover, the fact that this resisting power resides in the membrane of the animal recently killed, but is not retained after three or four hours, satisfactorily proves that this selective power is not merely a physical phenomenon, but is a vital process. When we examine the internal surface of the intestinal mucous membrane of a recently killed animal, in which the absorption of nutritive matter

is in full action, we observe the lacteals turgid with chyle, their extremities imbedded in numerous globules, presenting an opalescent appearance and giving to the end of the villus a mulberry-like form. This appearance is due to the epithelial cells covering the extremity of the villus, with the chyle which they have absorbed and which they afterward yield up to the lacteals. In this connection it is right that I should state that Professor Delafield maintains that connective tissue contains a very abundant system of lymphatics, consisting of canals of different sizes and of stellate spaces communicating with them. Dybokowsky and Klein describe lymphatics of the pleura. Delafield represents them in these plates: iv, vii and viii. In the fourth plate we see the pleura magnified 750 diameters; in plate vii, lymphatics of the parietal pleura of the dog magnified 90 diameters; in plate viii, lymphatic spaces and connective-tissue cells magnified 750 diameters. It is not now my intention to dwell on the discrepant opinions of anatomists regarding the existence or non-existence of the lymphatic system in the several organs; let it suffice to say that lymphatic vessels have been denied to the brain and spinal marrow, to the free surfaces of serous membranes, to those of synovial membranes, to the cornea, to the connective tissue; and, though it is conceded that the mucous membranes are generally supplied with lymphatic vessels, it is on high authority stated that the lining membrane of the uterus, of the bladder and of the conjunctiva, both palpebral and ocular is without them. Even in the cutaneous system, which in some places is richly supplied, there is nothing like a uniform distribution of them. The parts most distant from the center of the circulation especially abound in them; the fingers and toes, the scrotum, the glans and prepuce, the extremity of the nose, the pavilion of the ear, and the scalp, are the points where they can be seen in abundance. To these may be added the secreting glands, especially the mammary gland, the testes, the ovaries, the muscular layer of the gravid uterus, the liver, the lungs. The internal or lining membrane of the heart possesses lymphatics, but that lining arteries and veins does not present any appearance of them. Those among us who have seen Mascagni's plates, in which he represents the subconjunctival membrane as

a rich network of lymphatics, prepossessed as he was in favor of his theory, that the cellular tissue was the matrix of the lymphatic system, cannot avoid being struck by the apparent adaptation of the representation to the theory. Yet if we are to believe anatomists of the present day who have made repeated experiments to test this theory, we are assured that the views of Mascagni were illusive and unsupported by a single fact. Notwithstanding this, recently the German School, including such names as those of Virchow, Teichmann Ludwig, Tomsa, His, Frey and Recklinghausen, have adopted Mascagni's views as to the connective tissue being the source of the lymphatic system, though differing, respecting the mode of its origin in relation to the tissue. These men have been challenged to demonstrate this origin, but to the present they have been unable to do so. The same proof of Robin's lymphatic sheath, surrounding as with a muff the capillaries of the brain, has been demanded, and with the same success. Neither he nor His, who calls them the perivascular canals, has been able to trace them to an origin or to a termination in a lymphatic gland—a necessary condition of every lymphatic vessel—as none such in man can reach the general circulation without passing through at least one gland. Without going more into detail, we may group the prevailing opinions with regard to the origin of the lymphatics under three heads: first, The lymphatics are closed at their origin; second, They are not closed, but communicate with the corpuscles of the connective tissue; and third, They are not closed, but communicate with what Recklinhausen calls the plazmatic channels. Now, Recklinhausen does not deny the existence of these corpuscles of the connective tissue, but places them in relation to the origin of the lymphatics in his lacunæ channel, or slits of the fibrillary substance of the connective tissue. Perhaps we may receive as a dogma the position now about to be laid down, as it rests on the authority of the most distinguished anatomists of the present time.

The lymphatic vessels take their origin in a system of most minute capillaries and lacunæ, which unite to form capillaries of greater magnitude, then trunks. These lacunæ are stellate spaces, the points of which anastomose with those of other lacunæ.

The minute capillaries referred to above are extremely fine canals which unite the lacuna to each other. These minute capillaries form loops in anastomosing with the sanguineous system of capillaries, thus communicating with the general circulation of the sanguineous system. The diameter of these minute capillaries is such that nothing can enter them from the blood-vessels but serum. The lymphatic system not only concurs to absorption—it has the office of forming the solid parts of the blood. The lacunæ above mentioned are filled with very fine granulations, the first rudiments of future white or colorless corpuscles, and these are carried along by the larger lymphatic capillaries. It may now be asked, are not the several bodies which under various names are termed the hæmopoietic organs, the special organs by which these colorless corpuscles are formed? That they are not the only source of these corpuscles is evident from the fact that these are seen at the distal end of the lymphatics before these vessels meet with a gland. That they exist independently of lymphatic ganglions appears from the existence of them in the blood of some of the vertebrata that possess a lymphatic system but no ganglions. There are many sources of these corpuscles, and disease may affect an organ whose office it is to produce them without necessarily involving the supply from other sources. If we have had much divergence of opinion in regard to the origin of lymphatic vessels, we have had quite as much respecting the anatomy and functions of the lymphatic glands. Upon some points anatomists generally are agreed. In the first place it is allowed that each lymphatic gland is enveloped in a fibro-cellular capsule, that sends processes from its internal surface, dividing it into areola of varying size and shape, as these processes converge towards the center of the gland—that these areolæ contain follicles, which, with their contents of corpuscles intermixed with a delicate network of connective tissue, constitute the parenchyma or proper substance of the gland; that the afferent and efferent lymphatic vessels maintain the most intimate relations with this parenchyma, and that finally each gland is supplied in its interior with blood-vessels and nerves. In matters of detail there is, however, considerable difference of opinion. It is contended by some (Le Denteu and Lorguet) that the afferent vessels im-

mediately on passing through the fibrous capsule divide themselves into a network of capillaries formed of merely their epithelial layer lined by a thin wall of laminated tissue. From this network pass special ducts called sinuses, which penetrate deeply in maintaining relations with the blood-vessels on the one hand, and with the fundamental tissue, whether termed the proper parenchyma or adenoid tissue, on the other. The blood-vessels are closely united to the tracts of laminated tissue derived from the capsule. Vessels and tracts are completely surrounded by a cylinder, of which they occupy the center, and this cylinder is the sinus. Its internal surface is united to the external surface of the vessel and of the fibrous tract by a delicate network of connective tissue.

From its external surface a similar network passes to the parenchyma, in the midst of which it is plunged. The blood-vessels, as well as the tracts of laminated tissue by which the former are supported, occupy the axis of the sinus. The perpendicular cut of this has the form of a ring. The lymph circulates in the sinus between the central axis and the wall of the sinus. All the surfaces which are in contact with these parts, viz., the external surface of the vessel and that of the central axis—the internal surface of the wall of the sinus—the network of connective tissue uniting the latter to the axis, are covered with an epithelium of elongated cells. The same epithelium covers the connective tissue of the parenchyma. At about the third of the thickness of the gland, the sinuses terminate in another network; from this the efferent vessels arise. These no longer maintain the same relation with the blood-vessels and fibrous tracts.

These are the views that principally prevail at present on this subject. Robin, however, denies that the sinuses communicate with the proper substance of the gland. Others maintain that this communication is easily proved by means of injecting the corpuscles in the afferent lymphatics—that these corpuscles are found not only in the sinuses and in the epithelial cells that cover them, but also in the epithelial cells of the adenoid substance. To this it is objected that the injection proves nothing—that the presence of the colored corpuscles in the epithelium of

the sinus is the result of mechanical penetration, and that the infiltration of the epithelium of the trabeculæ of the proper substance is consecutive to the passage of the corpuscles through the wall of the sinus, and that it is not owing to the circulation of lymph in the proper substance itself.

The view of the distinguished Professor of Anatomy to the Faculty of Medicine of Paris does not coincide with the above. He says that in the first place the intimate texture of the glands is identical at all points of their thickness; that they comprise a fibro-cellular frame-work, constituted by an enveloping capsule and numerous elongations which extend from the latter toward the central part; secondly, a parenchyma or proper substance; thirdly, lymphatic vessels afferent and efferent, which maintain the closest relations with the substance; and, finally, blood-vessels and nervous filaments. The prolongations of the fibro-cellular capsule are very different in form and dimension. Some represent partitions, others are thicker, or round and filamentous. All these prolongations extend from the circumference of the gland to its center in continually intercrossing, circumscribing areolæ of unequal and irregular dimensions, and becoming smaller as they approach the center. The proper substance consists of closed vesicles like those observed in the thymus, thyroid body, and the spleen. These vesicles vary in size, being susceptible of considerable increase under the influence of hypertrophy, to which these glands are very liable.

The membrane which forms them is very thin, homogeneous, soft and friable. It is lined, or rather filled, with a spherical nuclear epithelium, with which are frequently mixed pavementous epithelial cells of variable size, containing a large nucleus. When these vesicles are opened they allow their epithelium to escape in abundance. They occupy the areolæ that are circumscribed by the fibro-cellular prolongations, which areolæ are themselves traversed in every direction by filaments of the finest texture. These filaments present a reticulated arrangement, hence the term *reticulum*, by which they are frequently designated. They thus appear to be a part of the fibro-cellular network of the gland, of which the fibers isolate themselves in order to form a still more delicate frame-work containing in its meshes the ele-

ment of the proper substance. This substance represents the active element of the glands. It is to it that is confided the office of reacting on the chyle and lymph, and of assimilating them, or at least of rendering them more and more assimilable to the blood, of which they are required to constitute a part. The afferent vessels divide before plunging into the gland; their first divisions creep over its surface; after a short course they pierce the fibrous capsule, then penetrate the superficial layers, where they subdivide and advance towards the deeper parts in proportion as they become smaller. These branches and their ramifications follow the prolongations of the fibro-cellular framework in advancing to the reticulum, and by their last divisions come in close relation with the proper substance. It is from the terminal extremities of these divisions that arise the first radicles of the efferents. In thus being continuous, the afferent and efferent vessels form a plexus before the latter leave the gland. This continuity may be seen in the embryo at a time when the glands are anatomically less complicated than in a more advanced stage of development. An argument in favor of this continuity may also be adduced from comparative anatomy; for, as we ascend in the scale of animated nature, we meet with no lymphatics until we arrive at the division *vertebrata*, and then, for the first time, in fishes we see lymphatics without glands or valves; but, in lieu of glands, we see plexuses. In the same way in reptiles we see no glands, but for the first time we see valves in a rudimentary state. In birds, though as yet the glands are not as yet fully developed, glands may be observed in the cavity of the thorax and at the base of the neck; elsewhere their place is supplied by plexuses. At length in the *mammalia*, in which class this symptom reaches its full development, the plexuses give way to glands. It is evident from this that in fishes, without leaving its vessels, the lymph in the lower class of *vertebrata* is modified in its passage through them; that in them no intervening organs are necessary to its elaboration. In a more advanced class we have further evolution in plexuses, still there is continuity of vessels. There is no interposition of cells, and yet it is to be inferred there is no want of such additional apparatus for the fulfillment of the functions of this system. Finally,

on injecting a gland and drying it you cannot see sinuses, but canals or portions of canals interlacing, like vessels in a plexus, with each other. Again, as we examine organized structures we cannot help remarking the simplicity and harmony that nature affects. Even where there is a variety of purpose you may often see a unity of design, and unless we can prove some special modification of function, we have no right, logically, to assume a deviation from the conformity to a general plan.

The lymphatic system, as all are aware, in man terminates in two trunks—one the thoracic duct, which, commencing at the second lumbar vertebra, passes to the left side of the neck, and forming there an arch, opens in the left subclavian vein, where it unites with the internal jugular; the other, the great right lymphatic vein, terminates in the R. subc. vein, where this unites with the internal jugular.

We may observe here a remarkable adaptation of means to ends, in the mode in which these two trunks discharge their contents into the blood-vessels—the convergence of the veins at an angle affording a more facile exit to them than they could have at any other point.

It may now be enquired if the lymphatic trunks communicate with the venous system directly elsewhere, and do their minute capillaries in the glands directly unite with the capillaries of the blood-vessels. We will first consider the former question.

I believe the opinion generally received is, that as we ascend in the scale of the vertebrata, the communication of the lacteal vessels with the veins becomes more and more restricted, until we arrive at the class mammalia, to which the following characteristics may be assigned: 1st. Greater development of valves. 2d. Increased number of glands. 3d. More limited communication with the venous system. Few anatomists of the present time will maintain the communication of a lymphatic trunk with the venous system elsewhere than in the junction of the subclavian and internal jugular veins; though Stene, Wepper, Schmiedd, Boerhaave and Meckel state they saw the junction with either the cava, vena azygos, hypogastric, lumbar veins or vena porta. On the other hand, we have a host of authorities denying the communication with other veins than the subclavian and

internal jugular, such as Haller, Cruikshank, Mascagni, Fohmann, Panizza, Rossi, Blandin, Cruvelhier, Carpenter and Sappey. Those in favor of the former opinion rest their advocacy of it on the acknowledged free communication between the trunks of the two systems in the lower classes of the vertebrata. Thus in fishes this communication has been satisfactorily demonstrated by Fohmann. This is well seen in the eel, where the caudal sinus, the rudimentary representation of a more advanced type of organization empties itself into the caudal vein, the orifice of which is provided with a valve. Again, in reptiles, which possess a very extended lymphatic symptom, this is supplied with contractile cavities called lymphatic hearts, which collect the lymph and directly pump it into veins. This provision for sending forward the lymph is remarkably well observed in frogs, which have two pairs of these pulsating cavities. In birds, also, in addition to their two thoracic ducts terminating in the angle of the subclavian and jugular veins, their lymphatics have also direct communication with the veins of the lower extremity. We should not, however, be satisfied with any argument derived from the structure of inferior animals, in a question that is susceptible of demonstration, as this certainly should be, and when we know that in this matter, *sub judice*, the anatomists denying the communication, have formed their opinion, aided by improved methods of dissection and preparing, we cannot hesitate to reject the views of the advocates of multifarious communication.

However, though there is no doubt that the usual termination of the thoracic duct is in the angle of the jugular and subclavian veins; yet a deviation occasionally exists in the human subject, now and again presenting a plexus rather than a single vessel, and terminating in the veins by several apertures, or even sending off a branch, as in the hog, to terminate in the vena azygos.

The next question to engage our attention will be, Do the lymphatic and venous systems communicate directly in the lymphatic glands? Tiedeman and Fohmann, both great authorities, think so, and rest their opinion on the following facts: The marked contrast between the number and size of the lacteal vessels and the small caliber of the thoracic duct. The continuation of life when this duct has been obliterated. The passage of chyle into

the sanguineous system, when the principal mesenteric glands are affected by tubercular degeneration; provided that those nearest to the intestinal canal are unaffected by disease; and the absence of general or partial dropsy when the mesenteric glands are thus diseased. Again, it is stated that the venous capillaries can be injected in the glands from the different vessels. But this is denied by Cruveilhier, Carpenter and Sappey. When the injection thus pushed is seen in the veins, it is the result of a rupture which easily takes place when the gland is softened from commencing decomposition; but in every instance where the injection was made in glands fresh and free from decomposition, the efferent vessels have been filled, but not the venous capillaries.

I have now hastily glanced at some of the most important characteristics of the anatomy of the lymphatic system, not intending that any such cursory treatment of my subject should be considered as an effort at its exhaustive exposition, or more than a necessary introduction to the treatment of those morbid conditions of the lymphatic vessels and glands that remain for future consideration. Neither a wide expansion of general views nor a detailed precision of individual facts would be consistent with my aim, which has been to present to the profession those leading anatomical points that may conduce to a more accurate conception of views on the pathology and symptoms of diseases of the lymphatic system.

ARTICLE II.

THE TREATMENT OF VARICOCELE. WITH A CLINICAL REPORT OF CASES TREATED BY AMPUTATION OF THE SCROTUM. By G. FRANK LYDSTON, M.D., Late Resident Surgeon, Charity and State Emigration Hospitals, New York. Lecturer on Genito-urinary and Venereal Diseases, College of Physicians and Surgeons, Chicago, Ill

After the elaborate monograph upon the subject of varicocele, written by Henry, there would seem to be but little to add to the subject, but having been an enthusiastic advocate of the operation of amputation of the redundant scrotum, and having had the

opportunity of testing its efficacy I take pleasure in presenting some of my results and the conclusions drawn therefrom.

Varicocele, or varix, in its milder forms, at least, is not an affection which is intrinsically dangerous to life, but in nearly all well marked cases it gives rise to considerable mental annoyance, as well as a varying degree of actual physical suffering. In nearly every young man who is affected with varicocele sufficiently marked to attract his attention, a greater or less degree of mental depression and sexual hypochondriasis exist, and, indeed, serve to make life miserable, in certain instances.

The physical deformity which varix may occasion may give rise to a great annoyance if the patient be at all sensitive, as is illustrated by Case V of the present series. In the slighter cases, such palliation as may be obtained by the use of a suspensory bandage and the application of cold and electricity may suffice to render the affection tolerable, and to prevent any increase in the size of the varix, but in the more severe cases the characteristic changes in the venous walls, due mainly to their loss of tone, and to connective tissue proliferation, go on, and we have as a result increased enlargement of the spermatic plexus, with all its attendant discomfort. In such instances the suspensory bandage fails to prevent a noticeable degree of deformity, and to allay the various symptoms completely. Its failure to relieve the patient's mental condition is especially evident, for the patient in removing and re-applying his bandage is made painfully cognizant of his deformity. The knowledge that he is unlike other young men, particularly as regards his sexual apparatus, has a peculiarly demoralizing effect upon such a patient unless he is unusually indifferent.

For such cases, then, we must devise some more effectual means of relief than are afforded by the ordinary measures of palliation. The various radical operations for varicocele are, as is well known, more or less dangerous to life, and to the functional integrity of the testicle of the affected side, and we ordinarily prefer to avoid all risks, where practicable. To many surgeons the necessity of an operation for the relief of varicocele does not seem to be at all apparent, and, indeed, we must confess that the affection may be temporized with in a large number of

cases. When, however, the patient suffers from the amount of mental and physical discomfort experienced by many of the cases that present themselves to us for treatment, something should be undertaken for their relief. An additional indication for operation lies in the danger of traumatic or spontaneous rupture of the diseased venous walls and the consequent formation of hæmatocele, which is, as is well known, a serious affection when involving the scrotum.

There is a popular idea that the danger of fatal hæmorrhage in operations for varicocele is very great, and as a consequence of this, and the tendency on the part of different surgeons to temporize with the affection, or turn the case over to instrument makers to have suspensories applied, the proportion of cases presenting themselves for operative treatment is very small. That a considerable degree of actual pain may be complained of in the more advanced cases, is exemplified by several of the cases described in the present paper.

I shall make no attempt to present the literature of varicocele, but will merely mention several of the operations suggested and practiced for its relief. We have a number of operations which have been recommended for the radical cure of varix; a radical cure implying the obliteration or inflammatory occlusion of the affected veins; among the most important of which are those of Vidal de Cassis, and Mr. Henry Lee. Vidal's method is familiar to most surgeons, and consists in passing an iron pin through the scrotum so as to pass between the vas deferens and the enlarged veins. A silver wire is then passed alongside the pin, in such a manner that the veins will be included between the pin and the wire, after which the wire is made fast to the pin at each end, and the pin twisted so as to bring a certain amount of compression to bear upon the veins. This twisting is repeated every day or two, until the wire has ulcerated through the veins, after which the pin becomes loosened, and is removed. The veins are in this manner cut across, and occluded by inflammatory adhesion. Prof. T. M. Markoe has modified this operation by dispensing with the pin, and passing the silver wire in such a manner that it forms a loop, enclosing the veins, after which the ends of the loop are clamped to a lead plate upon the surface of the scrotum.

The wire is tightened from day to day, until the veins are severed, and the loop is free, when it is removed. Now, these operations, seemingly so simple and devoid of danger, are neither the one nor the other. Unless great caution be observed, hæmorrhage, with the formation of scrotal hæmatocele, may occur, from imperfect occlusion of the veins, and there is always more or less danger of exciting phlebitis. It is also by no means impossible for even surgeons of some experience to include the vas deferens in the loop of wire, an accident which will inevitably be followed by atrophy of the testicle, and may result in fatal tetanus as a result of peripheral irritation in this important structure. A case recently occurred in this city, in which a gentleman accidentally ligated the vas deferens in operating for varicocele, with the result of inducing atrophy of the testis. Atrophy of the testicle after the ligation of the spermatic veins, however, does not necessarily imply that the vas deferens has been included in the ligature, for such a result may ensue from simple interference with the nutrition of the organ consequent upon obstruction of the return circulation.

Mr. Henry Lee's operation is performed as follows: A segment of the anterior portion of the scrotum is excised, and the veins exposed, and temporarily compressed. The varicose vessels are then excised, and their cut extremities seared with the hot iron. When done antiseptically, this operation may yield excellent results, but we have still the same danger of atrophy of the testis that exists in the operations of Vidal and Markoe, although there is little danger of accidental deligation of the vas deferens, from the fact that the operation comprises exposure of the vessels instead of their ligation in the dark, if we may so express it. Now, it seems to me, that we are hardly warranted in performing operations of the nature of those described, until some safer method has been tried. In the amputation of the redundant scrotum, we have recourse to a measure which is far safer than the numerous radical operations, and, if properly performed, one which yields uniformly good results. Even in the event that in certain extreme cases we may be compelled to repeat the operation after the lapse of years, or even though the patient be compelled to wear a suspensory bandage for the remainder of his life,

we will have answered all the indications in the case, and more especially the relief of the deformity and the sexual hypochondriasis. The Astley Cooper operation, then, so long neglected, is, as modified by Henry, a perfectly practicable means of relieving varicocele, and should be performed in preference to all other operations for this purpose. The fear of hæmorrhage excited in the minds of many, says Henry, "is now set aside by the perfect success following the operation."

Now, although, in my own experience, I have met with but one case in which apprehension, or even any great degree of annoyance, has been caused by hæmorrhage, and which in this case was due to a moderately well-marked hæmorrhagic diathesis, there has been a special tendency to venous oozing in my cases, which has led me to modify the operation somewhat, to obviate the disturbance of the wound, caused by the effused fluid. In the first two cases presented in this paper, I followed the details of the Henry operation in the main, using, however, his old form of clamp. In my later operations, I have modified the dressings somewhat, and, I believe, with advantage. Instead, of simple interrupted sutures of silk, I now use chromated catgut, for the interrupted sutures, with silver pins, and the figure of 8 silk suture, at the points of extreme tension, and at intervals varying with the amount of tension present or anticipated. Sutures of interrupted silk between the pins are not objectionable, but where convenient, I prefer catgut. The number of sutures should be sufficient to accurately approximate the cut surfaces. I find the silver pins much more trustworthy in cases characterized by extreme tension—and indeed, the tension is always great if a sufficient amount of scrotal tissue be removed—than any form of suture, whether of wire, silk or catgut.*

I find that the use of adhesive plaster in the first dressing, may advantageously be dispensed with. They are, however, of great service after the sutures and pins have been removed. As a substitute, I find graduated compresses to be all-sufficient in supporting the parts. These compresses may be made of carded

* I observe that Henry has recently advocated the use of silver pins also. I had used them prior to the publication of his remarks upon their advantages, and I believe they have been recently used by other surgeons in the old method of operating.

oakum or borated cotton. After closing the wound I wash the surfaces with a warm saturated solution of boracic acid, and dust the edges of the wound with powdered iodoform. Prior to closing the lower angle of the wound I insert a drainage-tube of decalcified bone, which substance I much prefer to rubber. The wound having been properly cleansed and the edges approximated and sprinkled with iodoform, I place a piece of lint, in which holes are cut to allow the escape of discharges, smeared with carbolyzed vaseline, over the part, and then cover this with a piece of protective dipped in a 1-20 solution of carbolic acid. These dressings are for the purpose of preventing those which are placed above them from adhering to the part. Over the whole is placed a quantity of borated cotton, in such a manner that compression will be exerted upon the sides of the scrotum, thus supporting the wound. The dressings are retained in place by a large square of muslin, after the fashion of a diaper, a hole being cut for the penis. When the bowels move the bandage is removed, the dressings being supported by the hand of the patient while the bed-pan is being used.

I have been led to prefer the use of a warm solution of boracic acid to the ordinary cold solutions of carbolic acid, chiefly from the view that it is a more efficient antiseptic, is less likely to produce irritation, and is almost absolutely safe as far as the liability to injurious absorption is concerned. It is also of a temperature more nearly corresponding to the normal temperature of the tissues, and consequently is less likely to depress their vitality than are cold fluids. As a matter of simplicity, the dressing of iodoform and borated cotton is preferable to Lister's dressing, and as far as my own experience goes it is equally aseptic and antiseptic, and yields as uniformly good results.

It has been my experience that those cases in which healing by granulation rather than first intention, occurs, do better in the end, from the fact that the inflammatory thickening, and cicatricial contraction, yield a firmer support for the varix. A speedy union is, however, desirable, as the patient is usually anxious to get about, and the slower the method of healing, the greater the danger of inflammatory complications.

The most important point in the performance of amputation of

the scrotum for varicocele is the amount of tissue to be removed. Henry's remarks upon this subject are so comprehensive that I take the liberty of repeating them: "Regarding the amount of scrotum to be removed, I can only say that I take away all that is not absolutely necessary to form a covering for the testicles. There is no danger of removing too much if the clamp be skillfully applied, and without skill there is more probability of a second operation being called for to remove more tissue." I can heartily endorse this statement of Henry's. I have observed that even in those cases in which the remaining portion of the scrotum is seemingly scanty at first, the tissues will soon accommodate themselves to the testes and yield all the room necessary.

I have mentioned the use of drainage tubes in the operation for varicocele, and I desire to state that from my experience in Cases I and V of this series I have been led to believe that drainage is an essential element of the operation, being indicated by the tendency to extreme tension from imprisoned blood. The primary hæmorrhage in these cases is usually slight, on account of the pressure of the clamp, but after this is removed and the wound has been closed there is a tendency to passive oozing of blood and serum, which may accumulate in considerable quantity, and even cause separation of the edges or giving way of the sutures. In Cases II, III and IV drainage tubes were used for forty-eight hours with the best results, union by first intention occurring, thus offering a marked contrast to those cases in which drainage tubes were not used. The same laxity or lack of tone of the vascular walls, which predisposes to varicocele principally, gives rise to the passive oozing which causes the trouble in such cases.

This oozing is perhaps rarely if ever dangerous to life, but I think that it constitutes an important complication of the operation and one which should be guarded against. The drainage tube not only prevents the accumulation of blood, but it facilitates the application of styptics in case hæmorrhage should be excessive.

CASE I.—J. W., German, age 28; occupation, driver. This patient stated that he had been addicted to masturbation to an extreme degree until 22 years of age, at which time he married.

After marriage masturbation was substituted by sexual excesses. An enlargement of the left side of the scrotum was noticed at about the age of 20, and the patient was told at that time that he had a varicocele. During the last few years marked increase of the scrotal tumor had been evident, and a suspensory bandage had been worn for about a year. On admission to the hospital, the patient stated that his sexual powers were fast decreasing—probably as a consequence of mental depression as much as anything—and it was for this trouble chiefly that he applied for relief. Henry's modification of the Astley Cooper operation was performed, with, however, an old-style clamp. No drainage tubes were inserted, and the wound was closed partly with silk, and partly with silver wire. Secondary hæmorrhage occurred on the same day and was followed by some sloughing at the lower angle of the wound. Healing of this portion of the wound occurred quite rapidly, by granulation, the upper part uniting by first intention, and the wound being perfectly healed by twentieth day, at which time the patient was discharged. When last heard from, one year after the operation, he expressed himself as well pleased with the result of the operation, and entirely relieved of his symptoms.

CASE II.—Also a hospital case; a Bohemian about 23 or 24 years of age, and unable to speak English or German, and consequently to give any history of his trouble. The patient was debilitated, and appeared to suffer considerable annoyance from his varix, complaining of pain in the back and the affected testicle, as nearly as could be made out. The varicocele was very large, and involved the left spermatic plexus. The scrotal veins were greatly enlarged and varicose. After the administration of tonics and a nourishing diet for several weeks, the scrotum was amputated, as in the preceding case. There was very little hæmorrhage attendant upon the operation, and no secondary oozing of any consequence, but unfortunately, through carelessness of the nurse, erysipelas was set up in the wound on the third day, which resulted in considerable sloughing of the scrotal tissues, and prolonged healing for five weeks. At the end of this time, however, union was perfect. The result was all that could be desired, and the patient left the hospital in an apparently con-

tented frame of mind. The subsequent history of this case, like the majority of hospital cases, could not be learned.

CASE III.—W. F., age 30; occupation, clerk. This gentleman stated that he had always been rather feeble, although enjoying fair health. Both masturbation and sexual excesses were acknowledged. Enlargement of the left side of the scrotum began to be noticeable at about the age of 18, and has since greatly increased, but had never been examined prior to his consulting me. By the advice of a friend he began wearing a suspensory bandage some years ago, and has used one more or less constantly ever since. Three years before I saw the case syphilis was contracted, and it was for its tertiary manifestations that I was consulted. On examination syphilitic nodes over both *tibæ* were found, and a history of the ordinary course of secondary syphilis was elicited. Severe osteocopic pains at night were complained of chiefly, and in addition great pain and discomfort from the varicocele were prominent sources of annoyance. A moderate varix of the right side was present, an occurrence not very frequently seen. Under the mixed treatment and a generous diet the condition of the patient rapidly improved, so that in four weeks I felt warranted in operating for the varicocele. In this case I modified the operation somewhat. Carbolized cat-gut was used instead of silk, and a drainage tube of decalcified bone inserted. As an additional support, four silver pins with the figure of 8 suture were inserted at the points of greatest tension. The wound was dressed with borated cotton and iodoform. Considerable venous oozing occurred in this case, but it was quite readily conducted away by the drainage tube, and produced no trouble whatever. Union by first intention was perfect throughout, and the drainage tube and pins were removed on the second and fourth days respectively, the sutures being allowed to soften and come away spontaneously. On the tenth day the patient was given a suspensory bandage, and allowed to go about and attend to his business. When last heard from (one year after the operation) he had dispensed with the suspensory bandage, and was feeling perfectly well. Small doses of hydrarg. had been taken meanwhile, and there had been no return of his syphilis.

CASE IV.—F. S., age 28; occupation, book-keeper. This pa-

tient stated that he had always been somewhat delicate, but had had little real sickness. Had never masturbated to any extent, nor been addicted to sexual excesses. Enlargement of the left side of the scrotum began at about the age of 21. Had had no treatment, nor had anything been done save the application of a rather rudely constructed suspensory bandage. On examination, a varix of moderate size was observed, and also a moderate varicosity of the veins of the extremities. The patient appears well in other respects, although evidently of not very robust physique, and seeks relief for so-called "spermatorrhœa," which, upon investigation, proved to consist of a nocturnal emission occurring once a fortnight. Considerable mental depression, with pain in the back, and testis were also complained of, the sense of painful, dragging weight upon the spermatic cord being especially annoying. The same operation was performed as in Case III., chromated gut, however, being substituted for the ordinary carbolized, and a hot saturated solution of boracic acid being used to wash the wounded surfaces. Five silver pins were inserted, and the iodoform and borated cotton dressing applied. Union was perfect throughout by first intention, the pins being removed on the third day. On the eleventh day a suspensory bandage was applied, and the patient allowed to resume business. Thirteen months after the operation this patient remained perfectly well, although by my advice he still wore a suspensory bandage.

CASE V.—W. H., age 21; occupation, amanuensis. This patient was always delicate, and is of a lymphatic temperament, although he has, as a rule, enjoyed comparatively good health. Has always been of a somewhat hæmorrhagic diathesis, and had consequent apprehension of hæmorrhage from an operation. About three years prior to his consulting me (August '81) this gentleman noticed an enlargement of the left side of the scrotum, from which, however, little trouble was experienced, save from mental disquiet, due to the knowledge of his deformity, until about a year ago, when he began to be annoyed by pain in the back and testis, sometimes radiating into the inner aspect of left thigh. These disturbances had gradually increased up to the date mentioned. When I examined this patient he stated that nothing had been done for the trouble, and that he was suffering

quite severely from neuralgic pains in back, spermatic cord, and thighs, with a sense of dragging, increased on movement. Marked sexual hypochondriasis, with frequent nocturnal pollutions, were also prominent features of the case at this time. Neuralgia of the vesical neck, with frequent calls to urinate, also gave rise to great annoyance. The principal complaint on the part of this gentleman was that the deformity was very conspicuous, and it was mainly for this that he desired treatment. As his circumstances were not favorable to an operation, I followed a simple course of palliation, pending such a time as he should select for its performance. The nocturnal emissions and vesical neuralgia yielded readily to the cold sound. By these means and the application of a suspensory the patient was so far relieved that he deferred the operation for more than a year, but in March of present year decided to have it performed. I was unable to secure or prepare the chromic gut in this instance, and hence used carbolized silk. For the same reason drainage tubes were omitted. I found it necessary to remove a large segment of the scrotum, the varix being the largest I have ever seen. Five silver pins were inserted, and the boracic acid, borated cotton and iodoform dressing applied as usual. Venous oozing was not profuse, on account of the pressure of the clamp, during the operation. Union by first intention occurred throughout, but on the third day great pain and tension about the wound was experienced, and the lower portion of the wound was separated by clots contained in the scrotal cavity. On opening up the wound and removing the lower sutures and pins, I found a large amount of coagula—at least several ounces—and on turning these out quite a cavity was exposed. Venous oozing persisted for a week, when it ceased, and healthy granulations appeared. Healing was now quite rapid, and in a few days the wound was entirely closed, leaving an excellent result. The scrotum, at first rather tight, soon accommodated itself to the testes, and no trouble from this source was experienced. The relief afforded by the operation has been very marked, both mental and physical improvement being evident. The patient was attending to business on the twentieth day, and had drainage tubes been used this period might have been reduced one-half.

To secure a successful result from the operation of amputation of the redundant scrotum for varicocele, various general and local measures are indicated after the wound has healed, and these points are too often neglected. The most important point is the continuous wearing of a suspensory bandage for several years, or in certain instances, for life. This bandage should not only support, but should compress the parts, a large or ill-fitting bandage being useless. The patient should take a sponge bath daily, and should keep the bowels freely open, for, as is well known, the pressure of a distended colon upon the left spermatic vein has an important influence in the causation of varicocele. Daily applications of cold salt and water, and the Faradaic current, are useful. Internally, the mineral tonics, strychnia and ergot, should be given. These various measures tend, after a time, to restore the normal tone and resiliency of the venous walls, to a certain extent, and prevent a recurrence of the varicocele.

125 State St., Chicago, May 1, 1883.

ARTICLE III.

CEREBRAL HYPERÆMIA. By J. M. G. CARTER, A.M., M.D.
Waukegan, Illinois.

The increased flow of blood to the brain, commonly called cerebral hyperæmia, or congestion of the brain, is a condition of very frequent occurrence, and the cause of much physical and mental suffering. It exhibits numerous forms, and depends upon a variety of causes.

Many varieties of cerebral congestion have been described, and elaborate classifications made, but in practice they are usually grouped under two heads—acute and chronic. Congestion may occur in various degrees of intensity, from a slight increase above the normal cerebral circulation to such an influx of blood to the brain as will entirely destroy its functions. In whatever degree of severity the attack is made, if the onset is sudden and of short duration it is acute. If, on the other hand, the morbid process is slow in its progress and the disease of long continuance, the

case is chronic. It is evident that the chronic variety may result from the acute, and the acute may supervene upon the chronic. In the chronic form the impairment of cell function is more gradual, stupor is more characteristic, and there is a greater amount of extravasation from minute vessels. In the acute form there is greater tendency to rupture of vessels and sudden loss of consciousness. The following cases from private practice illustrate these forms, and show the usual course and symptoms of the disease :

J. C., æt. 26, was a close student and a hard worker, by profession a teacher. About the middle of May, 1872, he first felt a pain in the right superior frontal region, which interfered materially with mental application, or close attention to any subject or work. Every day toward the close of his work there was a heavy, uneasy sensation of fullness in the head, not unfrequently attended with pain. Occasionally he was annoyed by muscular twitchings of the eyelids, specks floating before the eyes, ringing in the ears, vertigo, and the like. These symptoms continued until the close of his school in the latter part of June. The sensations of tightness, like a band surrounding the head, dread of some impending evil, delusions and hallucinations, so often present in this variety, were not present, or, if so, in so slight degree as not to be noticed.

By the close of his school the symptoms were more marked. The pain was sharper than at first, and occurred more frequently during the day. His sleep was generally good after the first hour or two, and sometimes there seemed to be no insomnia even during the first hour after retiring.

When the pain was most severe the blood-vessels about the neck and head were distended and throbbing, and this always occurred during or after close mental application.

A short rest from his studies greatly relieved his troubles. Soon, however, he felt that it was necessary for him to resume his labors. No sooner had he commenced his work than there was a return of the disturbance of the cerebral circulation—pain, dizziness, full carotids, and "nervousness." These symptoms increased, until the first of October he was almost prostrated, notwithstanding his excellent appetite and care about physical

exercise. He was compelled to desist from both mental and physical labor, or exertion of any kind, not being able to do more than take very simple recreation, on account of the disturbance of the cerebral circulation which it invariably caused. He consulted a physician. For four months his condition remained unimproved. He was taking phosphorus during the entire time, and once or twice applied a Spanish-fly blister to the nape of the neck. He was unable to read more than five or ten minutes at a time without bringing on severe pain in the head, and physical exertion, as sawing wood, was just as sure to produce pain.

Finally, in February, 1873, the patient thought it advisable to secure the services of another physician. The trouble was diagnosed chronic congestion of the brain, with an atonic condition of the cerebral vessels. Rest, nourishing food, moderate out-door exercise were enjoined; and the pyrophosphate of iron with calisaya bark was prescribed as a tonic.

In four weeks the patient's condition was so much improved that, with the consent of his physician, he returned to teaching. By continued use of the tonic he was able to do the work of the schoolroom; but it was some four years before he was able to perform the amount of intellectual labor that he was accustomed to do before the commencement of his trouble in May, 1872.

T. S. W., æt. seventy-two, a Scotchman, of robust constitution; by occupation a farmer; temperate and of regular habits. In February, 1883, was thrown from a wagon, but not seriously injured. After that accident his family noticed that he was more irritable, sometimes peevish and fretful. His decisions were not so pronounced, and perhaps would be reversed several times before he settled on a line of action. He did not feel as well as before, and gradually discovered that he was not able to work as formerly. He had a terrible dread of impending financial disaster, notwithstanding he had a good farm and was surrounded by plenty.

About the 1st of July his symptoms were perceptibly worse, and he was disturbed by dizzy spells. July 8, while hoeing in the field he was suddenly seized with dizziness and fell forward to the ground. With some difficulty he got up and went to the house. Next day there was a recurrence of the trouble, and he

had greater difficulty in getting up. Having been sent for to see another member of the family, the physician was consulted in regard to Mr. W.

At that time, July 10, his pulse was slow—56—and full. There was a constant pain in the right superior frontal region, which occasionally extended across to the left side of the head. The bowels, which had been loose, were costive, and the tongue was coated. The carotids were distended, and the eyes somewhat congested, especially the retina.

Here was evidently a case of chronic congestion of the brain, with an impending acute attack. Rest, quiet, arterial sedatives, bromides and cold to the head were prescribed, and an engagement left for next day.

July 11. Found that he had been out; had fallen and was unable to get up without help. The pulse 54; pupils contracted; intellect somewhat dull; sensibilities obtunded; bowels moving freely from action of purgatives. Second visit: Pulse 60; other symptoms the same, but patient more restless. Chloral and ergot added to treatment.

July 12, first visit: Pulse 60; temperature normal; pupils contracted; patient restless and somewhat delirious; bowels constipated; appetite gone; motion on right side impaired. Second visit: Symptoms aggravated; pulse 80; temperature 101°; right side paralyzed, bowels constipated; pupils not changed.

July 13. Symptoms aggravated; patient unconscious; bowels had moved several times; breathing heavy; patient very restless; urine high-colored and scanty.

July 14. Patient in about the same condition as yesterday. Second visit: Pulse variable; urine passed involuntarily, high-colored and scanty.

July 15. Aroused with difficulty; great difficulty in swallowing; food ordered by enemata; pulse variable, ranging from 60 to 85; temperature about 101°; pupils variable, but generally small, yet affected by the action of light. Second visit: More easily aroused; coma deepening, except when wakened.

July 16. Aroused, and called the family, recognizing each member: pulse more regular at 80; food taken through stomach; between the lucid intervals the breathing was very heavy, almost

stertorous; the heavy coating which had covered the tongue had disappeared, leaving the surface moist and clean. Second visit: No particular change; patient apparently better; urine more abundant, but high-colored.

July 17. Patient was restless through last night; swallowing more difficult; not so many lucid intervals; other symptoms about the same. Second visit: Coma deepening.

July 18. Patient restless and unconscious; took very little food; pulse variable and weak; temperature variable, not reaching more than 102°; tongue drops into back of mouth as if paralyzed; patient turned on one side to facilitate breathing; coma becoming deeper and respirations more shallow.

Second visit—Deep coma; pulse variable and weak, ranging between 85 and 100; temperature unchanged; pupils contracted, yielding less to the influence of light; has taken no nourishment and cannot swallow; sinking rapidly; July 19, died at 2:15 A. M.

The face was not affected by paralysis, and when the tongue was protruded it did not deviate to either side. The muscles of the tongue seemed to be slightly involved as a whole, as it was with difficulty that the patient protruded it, and his speech during his lucid moments was difficult and his syllables were slurred, and a sort of thickness was noticeable in his pronunciation. The paralysis on the right side was total as regarded motion, and partial as regarded sensation. This is what Dr. Hammond calls the *apoplectic form*. It is so denominated in Reynold's System of Medicine, and by other authors. This form is most common in advanced life, and is generally fatal.

P. D., æt. 25, a robust farmer; had been working in the sun during the forenoon, and in the afternoon rode to town. The effect of the heat made him dizzy, and hoping to feel better, he took a glass of beer. Soon he went into the sun again, was seized with a feeling of dizziness and fell unconscious. Medical aid was called immediately.

The pulse was 60, temperature normal, head hot, and patient unconscious. At first there were suspicions that it was a case of intoxication, but careful examination of the symptoms and history showed it to be a case of acute congestion of the brain pro-

duced by the combined effect of the heat and beer. The free use of arterial sedatives and cold applied to the head restored consciousness, and in two days the patient was quite well.

It is important to know that many school children suffer from cerebral hyperæmia. It is also true that many children and parents complain of the over-taxing work assigned at school, when in fact the trouble is due to dissipation, late hours, novel reading, and the like, and is not at all due to excess of school work. Nevertheless, there are many cases of this malady among the children of our public schools.

A. G. was a healthy, rosy-cheeked girl of twelve years. She was in a class of boys and girls from fourteen to sixteen years of age, and being very ambitious, she studied very hard that she might excel. She soon became the subject of headaches, which increased in severity and frequency of recurrence. They were accompanied by flushing of the face, full carotids, redness of the eyes, and a sensation of fullness or tightness in the head. They did not trouble her on rest or holidays, but finally invariably followed close mental application. At times she was troubled with wakefulness; her appetite became capricious, and it became necessary to take her away from school. Rest, nourishing food, and moderate exercise restored her to health.

Any close mental application may bring on cerebral congestion. Drinking spirituous liquors, the use of certain drugs, especially opium, and the excessive use of tea and coffee, may lead to the same result. Extremes of heat and cold, malaria, renal, cardiac and other diseases predispose to this malady.

To understand the action of these ætiological agents, and to grasp the pathology of this disease, it is necessary to examine some points in the physiology of cerebral circulation under normal circumstances. About one-fifth of all the blood in the body passes through the brain at each cycle of the circulation. Hence when the heart's action is increased in rapidity the brain receives in a given time an increased quantity of blood.

Now, considering the small size of the brain and the delicate structure of its tissues, it is evident that an increase in the heart's action must throw a relatively enormous amount of blood into the encephalon. The blood passes to the brain with greater

velocity than it does to the rest of the body ; for, in accordance with the principles of mechanics, *fluids driven with the same force of compulsion* will flow more rapidly through small tubes (above capillary size) than through tubes of large caliber. Dr. Fleury has shown that in conformity to this law, with the aid of the power of vital contraction and the natural lubrication of the vessels, the blood in the carotids flows with greater velocity than it does in the aërta. (*Du Dynamisme Comparé des Hémisphères Cerebraux chez L'Homme.*) He also shows that there is a greater quantity of blood going to the left hemisphere than to the right. This depends partly upon the law just given and partly upon the anatomy of the parts. As the brachio-cephalic, or innominate artery rises from the arch of the aërta, it inclines toward the right. Hence, when the current of blood from the heart arrives at this point, that portion which passes into the innominate artery must turn somewhat backward ; and the result is that a smaller current enters this vessel than would if it arose from the arch inclining to the left of the linear axis of the body. Again, the current evidently strikes upon the left or internal wall of the vessel, and must be deflected toward the right, and the effect of this is to allow a smaller quantity of blood to pass into the common carotid than would pass into that vessel if the channel were straight, the whole amount being less than half what enters the brachio-cephalic.

The left common carotid is half as large as the innominate but at its origin from the arch of the aërta it inclines toward the left, so that it receives more than half as much blood as passes into the innominate artery. In accordance with the mechanical law before stated, the velocity of the blood current in the left carotid is greater than that in the innominate, and likewise it is greater than the velocity of the current in the right carotid. Thus it is readily seen that there is a greater quantity of blood passing to the left hemisphere of the brain than to the right. In this fact we have not only the reason for the superiority of the left hemisphere over the right in functional activity, but an explanation also of the greater frequency of hæmorrhage into the left side of the brain. Reference to these anatomical and physiological facts leads to a rational explanation of the paralytic

phenomena occurring on the right side, accompanying cerebral congestion so frequently. Any cause which increases the flow of blood to the brain necessarily produces greater disturbance on the left side of that organ; for, as the actual amount of blood received is greater than that received by the right hemisphere, the structures of the left hemisphere must be subject to greater blood pressure in congestion than the opposite side, and of course the tendency to rupture is greater. There is likewise greater danger of aneurism, or softening from pressure. Remembering, then, the fact of the crossing of the motor nerves in the medulla oblongata, the oft repeated question, "Why does paralysis most frequently occur on the right side?" is easily answered.

After the blood reaches the brain it passes into extremely small and delicate capillaries. Here any slight influences may interfere with the circulation in the encephalon.

An increase in the amount of blood in the brain may depend upon one or more of at least five causes—gravitation, obstruction, mental activity, physical activity, and vaso-motor paralysis.

If the hyperæmia depend upon either of the first two, it will be arterial; and if it depend upon the last, it may be either venous or arterial, or both.

Congestions produced by the stooping position, as in certain occupations, are due to gravitation. Tumors in the course of veins returning blood from the head, and other similar influences, act as obstructions to the venous flow of the blood, and produce venous congestion. Any activity, whether mental or physical, increases the flow of arterial blood to the brain, and when excessive, produces congestion.

The vaso-motor nervous system is that system of nerves and ganglia whose chief function, so far as known, is to control the caliber of the blood-vessels. Stimulation of these nerves produces contraction of the vessels, and paralysis produces dilatation. Drugs, like alcohol or opium, paralyze the vaso-motor nerves, and as a consequence produce dilatation of the vessels.

Whichever of the five causes named is the means of producing a congestion, the effects are the same. The first result, if the cause acts to excess, is distension of the vascular walls. The distension produces pain by pressure. A continuation of the

cause tends to induce an atonic condition of the vessels by paralyzing the vaso-motor nerves, or destroying the normal tonicity of the vascular walls. This is the condition usually present in cases of chronic cerebral hyperæmia.

When the blood is most abundant in the brain, the mental processes are most active, and this causes wakefulness and increased power of imagination. But when the brain is most active, waste is also most active, and there is need of more rapid repair. If waste exceed repair, there will result both atrophy of the part affected, and functional inactivity. Softening of the brain tissue is a frequent result. According to the mechanical law given above, if the vessels become dilated, the blood current is retarded in its flow; and Traube has found in the retardation of the blood current a source of sclerosis of the arteries. The white corpuscles, he says, remaining adherent to the lining membrane of the vessels, become changed into connective tissue, and finally undergo fatty degeneration or calcification. (Karl Hertzka, *Journal of Nervous and Mental Disease*, July, 1875.) The atheromatous process which follows this retardation may extend into the smallest cerebral arteries, and result in miliary aneurisms. In this way may be caused the pareses and paralyses which frequently result in cases of chronic cerebral congestion.

Furthermore, by continued distension of the capillaries, the perivascular spaces become filled out, and this prevents the circulation of the finest lymphatic vessels. This interstitial fluid expands other spaces, especially connective tissue cells. These cells enlarge and undergo a division of the nuclei, and the proliferation results in sclerosis of the brain. (Ibid.)

I have no doubt that this is the correct explanation of many of the cases of "nervousness" and "shaking palsy" in patients who have overworked, or who have been addicted to the use of alcoholic drinks or other intoxicating drugs.

The malarial poison increases the susceptibility of the various tissues of the body. This renders the organs more easily affected by an increased flow of blood, and more easily exhausted by overwork. In view of the fact that visceral congestions generally attend malaria, it may be concluded that the vaso-motor system is affected, and may be paralyzed, by this poison. There is no

reason why the persistent action of this agent may not produce congestion of the brain as well as of the liver, or any other organ; especially if the brain be subjected to as much abuse as the digestive apparatus; nor does it matter whether the poison is a blood destroyer or vaso-motor depressor.

The prolonged action of the malarial poison, like the prolonged action of the other causes of congestion, can only result in chronic cerebral hyperæmia. Such is the case with old whisky-drinkers and opium-eaters.

The pathological condition resulting from the use of particular drugs must be due to vaso-motor paralysis or to an increased action of the heart. These influences, continued for months or years, can only terminate in chronic congestion of the brain. The condition itself is first distension, then pressure upon the brain tissue, and at last sclerosis; or the vessels are dilated, tonicity is lost, retardation of the blood current follows, the atheromatous process sets in, and aneurism or rupture may result, accompanied by paresis or paralysis, and, perhaps, ending in softening of the brain and death.

Küser has shown that the blood of overworked or hunted-down animals is poisonous, rendering the flesh of such animals destructive to life. The same must be true, to a certain extent, of the blood of overworked men. Such blood cannot be proper food for the tissues, and particularly such tissues as the brain. This may be another influence to hasten the atheromatous process in the cerebral vessels. A great deal might be said concerning the treatment of this malady, but a few words must suffice here, as the text-books are sufficiently explicit on that point.

For an acute cerebral congestion the indication is to cool the head and diminish the quantity of blood in the distended vessels. Cold should be applied to the head in the form of ice or very cold water. Ergot and bromides diminish the caliber of the blood vessels, and hence reduce the quantity of blood in the brain. Arterial sedatives control the action of the heart, and prevent the flow of so much blood into the cranial cavity as would otherwise reach it.

In the chronic form, where the vessels have lost their tone, iron, strychnia and phosphorus will meet the indication. If iron

cannot be borne, arsenic may be substituted for it. Where malaria has had anything to do with the case, iron and quinine, or arsenic and quinine, are indicated. Where neither iron nor arsenic can be borne it may be advisable to use zinc. If an anodyne is needed, chloral hydrate should be used. In the chronic form, moderate exercise, nourishing food, and bathings are necessary.

ARTICLE IV.

INTESTINAL OBSTRUCTION FROM AN ABSCESS BEHIND THE POSTERIOR LAYER OF THE PERITONÆUM—ABDOMINAL SECTION—RECOVERY. By CHARLES T. PARKES, M.D., Professor of Anatomy, etc., Rush Medical College.

The patient, Isaac Meier, aged 21, a clerk by occupation, had never been previously ill. He called at Dr. Stanley's office on the morning of July 11, complaining of pain all over the abdomen, and some nausea. Upon examination, the doctor found the abdomen greatly tympanitic, and regular in contour. There was slight pain on pressure, and the tongue was coated. Temperature 100° , pulse 85. Gave him a pill containing oxalate of cerium, ext. belladonna and carbonate of bismuth. Ordered him to take injections every two hours until he had a passage from the bowels.

The patient had already taken Seidlitz powders without any relief from his constipation or distress. In the evening he sent for Dr. Stanley, who found him in great pain. The injections had had no effect, and the doctor, thinking they had been improperly given, administered a large one, and this also came away without being of any avail. Gave one-fifth of a grain of morphia sulph. hypodermically. The next morning the patient was about the house, feeling much easier; had no movement of the bowels. Again sent for Dr. Stanley in the evening, who found the symptoms the same. Ordered a powder of jalapa and calomel $\bar{a}\bar{a}$ gr. viii, to be followed in three hours $\frac{1}{4}$ gr. morphia sulph., if no pain. Called next day. Found no change in symptoms. Bowels unmoved. Requested a consultation, which

was granted. After consultation with Dr. Marguerat, the patient was given one drop of croton oil, to be repeated in two hours if the first dose was ineffectual. Morphia to be continued at proper intervals, if suffering pain. The patient continued about the same until the Monday following—six days from the first appearance of his trouble, when he began to vomit stercoraceous matter rather freely and quite often.

The temperature and pulse varied very little from their condition when the patient was first seen until to-day, when the temperature was $97\frac{1}{2}^{\circ}$ and pulse 106 and very feeble. Advised his removal to a hospital.

Dr. Stanley has very kindly furnished me the above history of this interesting case previous to the time when the man was placed in my charge July 17, 1883. I found him with a very rapid and feeble pulse—130, and with a temperature of 100° . The body is bathed with a cold perspiration. There is present a constant hiccupping and occasional vomiting of a very foul-smelling stercoraceous matter. The abdomen is slightly tender all over, upon palpation, and is only moderately distended. Cannot find any positive evidence of tumor or other sign indicating the point of obstruction, except that the percussion note is not as distinct over the right iliac region as elsewhere. No hernia present.

Having no history of the case at hand, and the patient being too ill to give any, of the commencement and progress of the trouble so far, nor what had been done for him, it was determined to delay any active interference until these points could be ascertained. Meantime, $\frac{1}{3}$ of a grain of morphia sulph. was administered hypodermically. The patient was placed in the knee-elbow position, and a large enema of soapsuds was given by hydrostatic pressure. The water was allowed to pass into the bowel until the patient complained of considerable pain. The enema, about three pints in quantity, soon passed away free from fecal matter or odor, and was unaccompanied with flatus. The diagnosis made was intestinal obstruction, whether intussusception or volvulus undetermined. The patient was told that, in all probability, nothing but abdominal section would enable the obstruction to be relieved. He consented to have the operation performed as soon

as his friends were acquainted with the circumstances. They could not be seen before the next morning, July 18. This arrangement was agreed to, partially to gratify this natural wish of the patient, and mainly to try the effects of complete narcotism, together with a repetition of the enema. The evening condition of July 17 was practically the same as that found at the morning examination. The morphia had subdued the pain and partially controlled the hiccoughing, but there was still occasional regurgitation of fecal matter; it could scarcely be called vomiting. The enemata, given as before, had produced no result, and came away unstained. The pulse was quieter. Morphia hypodermically was ordered to be continued as indications required. The large enemata were discontinued, and small ones, of milk $\frac{3}{4}$ and whiskey $\frac{5}{8}$, given for nourishment; these were retained.

Wednesday, 10 A. M., found the patient evidently worse and failing rapidly, and the friends consenting, operative interference was determined upon.

At 4 P. M. the patient was anesthetized, Prof. Gunn, and Drs. Reynolds, MacNeil, Stanley and Hanson being present.

An incision four inches long, between the umbilicus and pubes, directly along the linea alba, was carried through the abdominal walls and the peritoneal cavity opened. The intestines first showing in the wound were moderately distended and dark in color. These were pushed aside, and a collapsed fold thereof found low down toward the pelvis. While following this toward the ileo-cæcal junction, my finger, with slight pressure, went through a thin wall into a cavity, out of which immediately welled up, into the peritoneal cavity, among and around the intestines, and flowed out of the abdominal incision, an immense quantity of horribly offensive and greenish colored pus. The finger was kept in the opening it had produced, and the abscess cavity thoroughly explored. It was behind the posterior layer of the peritonæum, and extended as high as the body of the third lumbar vertebra, and as low as the brim of the pelvis, and into the right iliac fossa half the distance of its width. No fecal matter nor any other foreign bodies were found in it. When full and distended, the abscess may have caused an acute bend of the ileum, by pressure, just where the small intestine joins the large, sufficient to

obliterate the canal of the former. The intestines showed but very little sign of inflammation; were not matted together, and there was no evidence of perforation or inflammation of the appendix vermiformis. In fact, no cause for the obstruction to the intestines other than the abscess was found, after full and complete search.

The opening into the abscess was enlarged with the finger, a rubber tube introduced into it and held in contact with its deepest part. The other end of the tube was attached to a spout in the bottom of a bucket filled with warm water. The bucket was held about two feet above the patient's body, and the cavity of the abscess washed out in all its recesses. The washing was continued until the returning water was perfectly clear. The same plan was pursued in cleansing the peritoneal cavity, fully two gallons of water being used. A soft rubber drainage tube, of large size, was carried to the bottom of the abscess and fastened in the lower angle of the abdominal wound, and this was closed with ten silk sutures. The wound of incision was dressed dry with iodoform and borated cotton, over this some layers of carbolized gauze and a wide bandage, and patient was carried to bed and placed so as to lie with the wound dependent, in order to favor drainage. Instructions were given when he recovered from the anæsthetic to have him maintain that position.

The patient showed evidence of considerable shock, but soon rallied nicely by means of artificial heat and a few hypodermics of whisky. The anæsthetic—ether—acted very kindly, and the patient never vomited subsequent to its administration.

8 P.M.—The patient found entirely free from pain. Reaction established. Pulse 120. Temperature 100° . Given $\frac{1}{4}$ gr. morphia sulph. hypodermically.

8 A.M. July 19.—The patient has passed a very comfortable night; has no pain; has no vomiting; no hiccoughing. Abdomen not tender. Pulse 100. Temperature 101° . No movement of the bowels.

8 P.M.—Pulse 100. Temperature $101\frac{1}{2}^{\circ}$. The patient is restless, but has no special pain; no vomiting. The dressings are wet with discharge; were changed. The patient has pulled out the drainage tube. He will not give any reason for doing this.

Tried to reintroduce it but failed to do so. The discharge is free in quantity, colorless and odorless. The abdomen is undistended and free from tenderness. The wound does not look well—a reddish hue along the whole length of it. Dressings reapplied as before. A hypodermic injection of morphia sulph., gr. $\frac{1}{3}$, atropia sulph., gr. $\frac{1}{100}$, was given. Has taken milk during the day, retained it and asks for more. Milk to be given in small quantities. Has passed wind per rectum several times during the day.

During the night—4 A.M. July 20th—the patient became delirious, escaped from his attendants, got out of the window, climbed a high fence and went to a neighbor's house, where he was found and brought back to his bed.

At 8 A.M. I found him rational and resting quietly. The dressings were all disarranged and had to be removed. Several stitches at the lower part of the wound have been pulled out, probably by the patient's movements during his escapade. The deeper part of the wound seems well united. No union of the integument. The edges look red and angry. They were supported by strips of rubber plaster. Again tried to introduce the drainage tube but failed. There is but little discharge from the wound. The dressing reapplied.

8 P.M.—Patient's bowels have moved of their own accord this afternoon. No pain. No tenderness. Perfectly rational. Pulse 80. Temperature 99°. No medicine to be given. Continue nourishment.

From this time on the patient progressed rapidly towards recovery. The bowels acted freely and well every day of their own accord. Appetite returned and temperature and pulse became normal.

At the end of a week all stitches were removed from the wound. The lower half gaped widely open. The deeper structures, seemingly, are well united. The muscular tissue is partly exposed. I introduced two sutures some distance away from the edges of the wound and brought it together by tying them over a quill. This plan answered admirably, and healing by granulation progressed rapidly. At the end of the third week—August 7—the patient was discharged well. He

has called at my office twice since his discharge, and has returned to his employment.

Remarks.—One point in this case seems somewhat noticeable, namely, the absence of any extreme rise of temperature or rapidity of pulse, notwithstanding, there was complete obstruction of the intestines for eight days, with attending tympany and peritoneal inflammation. Still, in my experience even severer trouble with the intestinal tube, is not always accompanied with any remarkable change in these signs of constitutional impression. In one case, coming to mind, where post mortem showed gangrene of several inches of the intestine, neither the temperature nor pulse reached 100.

Other signs than abnormal variation of temperature and pulse must furnish the warrant for surgical interference—these alone do not supply trustworthy indications as to the degree of local difficulty.

Judging from this instance, the presence of pus in the peritoneal cavity is not of itself deleterious. Worse smelling or more offensive pus never came out of an abscess than here bathed the intestines and spread all through the cavity. Still, no further inflammation was lighted up, and that already existing quickly subsided. True, as far as it was possible to estimate, every drop of it was washed out of the cavity and from the surface of the intestines by a good force of warm water and in good quantity. The case certainly supports Mr. Lawson Tait in his advice and practice, to perform abdominal section and wash out the cavity in all cases where accumulation of pus is suspected, no matter what the source or cause.

The difficulty attending the determination of the cause of intestinal obstruction, previous to abdominal section, is recognized by all surgeons, and is used, in part, as an argument against the operation by most surgical writers. Omniscience alone could have guessed the cause of the obstruction in this case. Pain, vomiting and hiccoughing were relieved immediately by the evacuation of the abscess, and never returned. The passage of wind from the bowel a few hours after the operation, suggested the restoration of patulency to the intestinal tube, and the free discharge of fecal matter inside of thirty-six hours, made the

suggestion a reality. I suspect that the slight attack of delirium after the re-dressing of the wound was caused by the absorption of iodoform.

Quite a number of cases of intestinal obstruction seen in my own practice, as well as in the hands of other medical men, which have rapidly passed on to death under the ordinary methods of treating them, have for some time convinced me, that no case of this kind ought ever to be allowed to go without the chance of recovery after abdominal section. Many cases may die even with its reasonable help, but I am quite as sure, many lives would be saved by the adoption of a rule to operate.

ARTICLE V.

THREE CASES OF EXCISION OF THE HIP JOINT. By Jno. E. Owens, M.D., Prof. of Surg. Anat. and Operative Surgery, Chicago Medical College. Reported by Frank L. Rea, M.D., late Interne St. Luke's Hospital.

In the spring of 1882, Prof. Owens gave a course of surgical clinics in St. Luke's Hospital to the gentlemen of the practitioners' course of the Chicago Medical College. At each of the first three of these regular Monday afternoon clinics, which are continued through the college year, he excised the hip joint for hip disease. The patients were all natives of Illinois, one living in this city and the two others in the country. Neither had ever enjoyed but fair general health. The patients were, S—K—, a female aged ten years, an orphan, with a moderately marked phthisical hereditary history. She had been suffering from hip-joint disease two and one-half years, all treatment having been neglected.

F—Y—; was six years of age, and in addition to the hip disease had Pott's disease high in the dorsal region. His father was subject to attacks of hæmoptysis; mother healthy, and sister myopic and more or less strumous. This case seemed to present such difficulties of diagnosis that the hip disease was not made out with certainty until the joint suppurated. It was

recognized when he applied for admission to the hospital, and the abscess communicating with the joint was opened. Up to the entrance into the institution it had progressed six months. The disease was not recognized in this case at a time when conservative measures were of utility.

L— K—; of healthy Irish parentage—the youngest of a large family of healthy children, was aged five years. He had been suffering from hip disease for two (2) years. Orthopædic measures had been given an early and thorough trial by competent hands in this boy's case, but effected nothing. No assigned cause, as injury, was given for either case. Prof. Owens shows that many cases of hip disease and Pott's disease are of traumatic origin. He also affirms that the scrofulous appearance of this class of patients is in very many cases due to the bone disease, and that it does not by any means always bear a causative relation to it. The diseased hip-joint in each was disorganized, and the hip riddled with sinuses discharging pus in enormous quantities. All presented the pale transparent skin, fair hair, blue eyes, glandular enlargements, small muscles, large joints, tissues weak and of flabby texture, large abdomens, precocious minds, etc. The affected limb was adducted and shortened, the flexion of the thigh on the pelvis causing marked lordosis.

The muscular atrophy from want of use was great in the gluteal region, but existed in the whole limb when compared with the other one. The children were, in this stage of the disease, only occasionally affected with pain of any consequence. Dead bone was made out with the probe in each case in the situation of the head of the femur. Preliminary to the operation, which was demanded by the necessities of each patient, they were put upon quinine and iron, which, with the improved hygiene of the institution over that of their homes, effected such improvement in their general health as rendered them fair subjects for operation in about one month.

Operation:—Being the same in the three cases, one description serves for all. During the administration of the ether Prof. Owens gave as the indications for the operation: (1) Failure of orthopædic measures; (2) extensive bone mischief, with copious suppuration; (3) bad general condition; (4) in his experience the

operation has been a very successful one in childhood; and again, he remarked, what does further conservatism promise? death from exhaustion or amyloid degeneration of the viscera, or a remote and tedious recovery by ankylosis of the diseased joint. Patient being anæsthetized, and the part to be operated upon carefully cleansed and carbolized, Prof. Owens proceeded to operate, first verifying the presence of the dead bone with the probe, then with a strong scalpel beginning the curved incision, concave forwards from two inches above the greater trochanter to two inches below it, along its posterior border down to the bone. This was now denuded of its periosteum and soft parts by the elevator, and what remained of the carious articular surfaces was found in opposition. In regard to this point, Prof. Owens admits deformity resembling luxation, but the cause was always caries with absorption of bone, and in his now rather large experience he has never found the surfaces other than as in these cases, and is skeptical regarding the occurrence of the so-called spontaneous dislocation. The lips of the incision were now held apart by retractors, and the bone sawn through its upper extremity above the lesser trochanter with an Adams' saw; not, however, without previously attempting to turn the head of the bone out of its socket. This maneuver failed, as it occasionally does, in consequence of an involucrum formed around the remains of the joint by long-continued inflammation. What remained of the head, neck and greater trochanter were evulsed by the lion-jawed forceps.

Why is the greater trochanter removed when not involved in the caries? Because if left (1) it serves as a constant irritant to the tissues. (2) It is next to impossible to keep it away from the pelvic bones, causing pain from friction of the roughened bony surfaces. (3) It forms the outer wall of a pocket which cannot be efficiently drained. The last is the chief cause for its removal. A considerable extent of carious bone in the acetabulum in one case, L——. K——., was removed with the bone scraper. All of the sinuses which had led into the diseased joint through the undermined tissues, were slit up into the excision wound upon a grooved director. The condition of these sinuses, many of them containing particles of carious bone, made this the only means of securing the necessary cleanliness and drainage to

insure their healing from the bottom. The hæmorrhage was slight, and in no instance did a vessel require ligation. The operation lasted thirty minutes. The wound was now irrigated with a solution of carbolic acid 1-40, sponged dry, poured full of balsam of Peru, and completely filled by a tent made of a rope of oakum. The whole hip was now covered with a compress of oakum, and all retained by a bandage. The patient was then put into a Sayre's wire cuirass, the efficient padding of which is so important that it should receive the physician's personal attention. It is done in this way: The wire splint is covered with sheet wadding, cut in the proper shape and in sufficient quantity to insure thickness and softness. These layers are then covered with a rubber cloth, which is sewed on, smoothness being very essential. If this is not followed out, it will require more than ordinary care to prevent bed-sores. In addition to the permanent padding, a number of layers of sheet wadding were always put between the child and the splint. The extension of the shortened limb was effected by means of adhesive straps passing from the sides of the leg over the foot-piece, which was adjusted by means of a screw. The foot of the sound leg resting against its foot-piece furnished the point of support or counter extension. The body and both lower limbs were neatly bandaged to the splint. Sufficient extension only was kept up to prevent friction of the roughened bony surfaces, thereby preventing much pain. A practical point in this connection is that pain in the knee and the hip was often due to this cause, and received prompt relief by a few turns of the screw slightly increasing the extension. An anodyne was administered on recovery from the ether, and subsequently repeated when pain or nervousness called for it. Shock from the operation was slight.

Surgical fever in but one case went above 102°, lasting a few days and falling to normal. The dressings were removed forty-eight hours after the operation; the wound irrigated with a 1-40 solution of carbolic acid, thoroughly repacked with oakum saturated with balsam of Peru, and the whole hip covered with a compress of oakum placed between two layers of gauze—the inner one being lubricated with vaseline to facilitate its removal. From

this time up to the discharge of the patients this was done once daily, a tent, such as just described, being used until rendered unnecessary by granulation of the bottom of the wound. To protect the splint and the bed from the discharges of the patient, early teach the child to make his wants known, when by a suitable vessel and care in the position of the splint, the dressings are kept clean. Once weekly the cuirass was cleansed, the patient being removed for the purpose. The cuirass was omitted entirely after a time, averaging two months for each case. It is done gradually, thus: leaving it off for a few hours every other day at first, increasing time and interval so that in a short time it is laid away. In about two weeks after effecting this, apparatuses were put on each case.

In the case complicated with Pott's disease, F—— Y——, the apparatus consisted of a plaster jacket, a pair of crutches, and for the foot of the short limb a shoe, the sole of which was augmented by four ounces of lead. This limb being sufficiently short, no elevation of the sound side was required. He was from this time on taught, gradually and carefully, to walk, and left the hospital with the apparatus on four months after the operation. Six months later the apparatus, with the exception of the crutches, was discarded, the case illustrating beautifully a cure of a Pott's disease and of a hip disease with a movable joint.

In the case of S—— K——, a plaster jacket was also put on, and to this was attached, by a few turns of the plaster roller, an iron frame which supported a ball and socket joint opposite that of the hip. From this a steel bar, with ratchet in thigh piece, extended down the outer side of the limb, fastening to the sole of the shoe below; another bar extended along the inner side of the limb to the upper part of the thigh. These bars had hinge joints at knee and ankle, the former being a lock joint. They were held to the limb by leather bands buckling in front. Extension was effected in this case by means of the ratchet in the external thigh bar. This patient was also discharged about four months after the operation, with the apparatus still in use. A movable joint was secured in this case.

L—— K—— had applied a splint consisting of a leather pel-

vic band with a steel bar extending down the outer side of the limb to the sole of the shoe, and another one from this place along the inner side of the limb to the upper part of the thigh. These bars had hinge joints at the knee and the ankle, and the external thigh bar one opposite the hip-joint. This splint was put on to correct the marked internal rotation of the limb that had taken place. Extension was effected by a weighted shoe as above described. A pair of crutches completed the apparatus. The boy was taught to walk, and discharged in good condition, with a movable joint, seven months after the operation. The convalescence was protracted from leaving the tent out too soon, the wound healing superficially and requiring a secondary operation to secure drainage and make it heal from the bottom. In this operation the upper end of the femur was exposed and found to be smooth and rounded. This case has since (May, 1883), returned to the hospital with three sinuses leading down to carious bone. Considerable pus was being discharged. His general condition was much worse than when he left the institution. Ether was administered, and an incision two inches long was made in the line of the old cicatrix. Carious bone was found in the acetabulum and removed with the bone-scraper. A drainage tube was inserted and brought out at an opening two inches lower down. The wound was packed with lint and a gauze dressing put on.

An interesting fact in connection with these cases was the early and marked improvement in the general health which followed the removal of the carious bone.

July 20, 1883.

L— K— is in the hospital, convalescing favorably from the last operation. He is up and about, using apparatus consisting only of a pair of crutches and a weighted shoe for foot of short limb.

F— Y— is at home; all of the the sinuses healed; using no apparatus of any character.

Report from S— K— at this date is not favorable. The sinuses not healed are discharging pus, and doubtless lead to carious bone. The new joint is almost immovable. She is up and about, assisted by a crutch. She eats and sleeps well. This

child was unfortunate in being removed to quarters where she did not receive the requisite surgical supervision. Her plaster jacket was left on for a year; passive motion of the new joint was certainly neglected, as shown by the ankylosis which took place after she was taken away from St. Luke's; and further, I infer from the report received that she has been seen but two or three times by a physician during this time. This case illustrates that patients of this kind require the watchful eye of the surgeon until full recovery has taken place.

Prof. Owens entertains the following views on this subject:

1. He recommends removal of the greater trochanter in the excision.
2. He asserts that traumatism, not scrofula, is the cause of the disease in a majority of cases.
3. He is skeptical regarding the spontaneous dislocation of the third stage of hip-disease.
4. In the treatment after excision, he places much value on the employment of an apparatus with a ball and socket joint opposite that of the hip, in effecting a cure with a movable joint.
5. With additional experience he becomes a stronger advocate of early excision.

No. 112 E. MONROE STREET.

ARTICLE VI.

HOSPITAL CLINICS, Given at the New York Hospital, by Prof. W. H. DRAPER, of New York City. Reported and arranged by W. F. Becker, M.D., Wauwatosa, Wis.

NO. 1. A CASE OF PSORA.

The patient is a male, *æt.* 17 years; native of Germany; occupation, sailor. He has always enjoyed excellent health. Two years ago, from sudden effort, sustained an inguinal hernia. No history of gonorrhœa or syphilis. Temperate habits. Bowels have been regular, digestion and appetite good. Does not remember ever having eruptions when a child. Two weeks ago there appeared a vesicular and papular eruption between the fin-

gers of left hand, with much irritation. At the same time there appeared a slight lump under left arm. Subsequently the right hand became the seat of a similar eruption, followed by the same condition at the inner side of thighs and elbows. The patient cannot account for the cause of the disorder.

Examination.—At the present the eruption does not exhibit any distinct individual character of skin lesion, for erythematous spots, vesicles, pustules, blebs, papules, superficial ulcers and scales are all present. Vesicles between the fingers are well marked, exist around wrist and arms; several are well marked on genitals, none on face or neck; scratch marks disguise the character of others.

Remarks.—The disease from which this man suffers is scabies, or psora, or itch, as it is commonly called; it belongs to the group of parasitic skin diseases. It depends upon the existence of a parasite called *sarcoptes scabiei*, or, more commonly, *acarus scabiei*, which produces a vesicular eruption. Later the eruption changes, assuming a polymorphous or multiform character, consequent upon irritation caused by its presence. In this patient the polymorphous form developed very rapidly, it being but two weeks since the disease began.

The history of this disease exhibits many curious facts, interesting from a scientific aspect. The *acarus* is an insect readily seen with the naked eye, which thrives on human integument, choosing for its invasion such parts where the skin is soft and tender, as on the insides of fingers and toes, in the flexures of joints, as about the ankle, wrist or axilla, on inner side of thighs, and genital organs. These regions are the seat of election of the disease. Sometimes in certain artisans the insect selects other parts of the integument, which are subject to pressure and warmth. Thus, in tailors or shoemakers, who sit much, or in men who ride much, the disease not infrequently develops in the skin of the buttocks. Usually, however, it begins on the hands, and only reaches other parts by their contact to those regions, generally next invading the genital organs, and later reaching other parts.

The insect does not thrive upon the surface of the integument, as do the *cimex lectularius* (bed bug), or *pediculi*, but bores its

way into the epidermis, and makes its nest between the horny and mucous layers of the same, at a varying distance from the point where it penetrated. The canal thus formed is called the cuniculus. It can be detected only by close inspection, revealing itself by a grayish or whitish streak of a varying length, sometimes one-fourth of an inch or more. Here the female lays her eggs, and in the course of about ten days the eggs are matured, and reach the surface by the exfoliation of the epidermis. The young are there discharged, and meeting the male become impregnated, and in their turn burrow a new cuniculus, to repeat the process of their parent. The male acarus also burrows, but not so deeply as the female, only passing under the scales and crusts.

Symptoms.—The first symptom is that which is subjective and excites the patient's attention. It consists, as in this case, of a severe itching between the fingers. This irritation in some people of nervous temperament, is not confined to the part invaded by the parasite, but is universal—a general irritation existing, causing patients to scratch themselves everywhere; and the polymorphous form of lesion seen at the seat of the disorder is not caused by the ravages of the parasite, but subsequent and consequent to the scratching induced by the irritation of its presence.

The next symptom after the itching is the appearance of an eruption of a peculiar kind. This is, in its earliest stage, a vesicle with the acarian burrow or cuniculus running from it. This vesicle is after a time destroyed by scratching, and other lesions appear, following inflammation thus caused. The diagnosis is made from the polymorphous nature of the eruption, its location and the cuniculus, if seen. The crucial test, however, is the discovery of the acarus. This is done by inserting a needle through the cuniculus into the vesicle and turning out the insect. With the naked eye this has the appearance of a small white roundish body—under the microscope it develops more distinctive proportions. The discovery of the insect is often impossible, because of the destruction of its characteristic seat by scratching. It is claimed by many that without the discovery of the characteristic vesicle and the burrow

leading from it, one is not justified in pronouncing the disease as scabies. This is too forcible an assertion, for sometimes the disease does not show this kind of vesicle; besides, it may be destroyed in the manner mentioned, and its distinctive character thus lost.

Scabies is contagious, as all parasitic skin diseases are, and it may be transmitted by contact with person or from wearing apparel. Its contagiousness to a certain extent depends on individual susceptibility. All persons are not equally susceptible to vegetable or animal parasites. It is necessary, besides the contagious element which they contain, that they have the proper host for their reception. The acari select their host—they do not find all congenial. Among the large number of persons surrounding the bed, many might shake the hand of the patient without being affected, while others could not do so with impunity.

Treatment.—This is very satisfactory when the diagnosis has been correctly made, but it must be carried out properly. The rational method is to remove the cause. For this a large number of drugs have been employed—carbolic acid, creasote, mercury, salts, and others; but of all parasiticides, sulphur seems to be the classical one for the disease. It is used in the form of baths, fumigation, or inunction. The last is the more frequent manner, and its details can be well set forth, perhaps, by describing the process adopted in Paris in the larger hospitals, where a large number of such cases are treated, particularly in the hospital of "St. Louis," which is devoted exclusively to treatment of skin diseases. Here there are several apartments. In the first the patients are undressed, and stand around a bin of soft soap. With this each patient rubs himself and his neighbor, the object being to soften the epidermis; then another apartment is entered, where they lie in hot baths for a period of from twenty minutes to half an hour. This is to still further favor the process of softening the integument. The third apartment contains in its center a tub, filled with sulphur ointment, in the proportion of about three parts of sulphur, one part carbonate of potash and eight parts of lard. Here the process of inunction is gone through with in very much the same manner as that of

soaping; then the patients dress in their own clothing, which thus becomes disinfected. The entire process is repeated from three to five times, and the most obstinate cases are usually cured.

The same plan can be carried out in private practice. Care must be taken to make the application all over the body, as the acarus is migratory. The scalp, face and neck, where her incursions are scarcely ever found, are the only parts which may safely be excluded. The primary softening of the skin by the soaping and the bath is very important; without it the ointment is not efficient, for it opens the vesicles and the burrows and exposes their contents to the action of the sulphur. When the object of the treatment, viz., the destruction of the cause, is carefully adhered to, it generally gives much satisfaction.

ARTICLE VII.

LACTIC ACID IN DIPHTHERIA.—BY J. P. LYTLE, M.D.

Several years ago I saw a suggestion in one of the medical journals that a spray of dilute lactic acid would dissolve pseudo-membrane of croup.

I concluded that if it would do so, it would also dissolve the membranous deposit of diphtheria. Since then I have used it in a number of cases with the happiest results. Where the patient is old enough to permit a thorough spraying of the throat I have not failed to remove the deposit with two or three applications, sometimes with one.

May 4, 1883, 4 P.M., was called to see young B., aged sixteen. Face flushed; pulse quick; temperature 102; throat very painful, and deglutition very difficult. Upon examining his throat I discovered a gray, gelatinous membrane fully one-eighth of an inch thick, covering the entire tonsil, and extending over the soft palate of left side; right inflamed and swollen, but no deposits upon it. I sprayed the throat with the following solution: Acid lactic concent., gtts xxx, aqua \mathfrak{z} i, and had the satisfaction of seeing the membrane entirely disappear. I put him on general treatment, stating that I would call in the morning. I then

found the left tonsil and palate clear, but the right tonsil and palate had upon it a deposit fully as extensive as the left had upon it the night before. I again used the spray, and had the satisfaction of seeing the throat clear of deposit when I was through. I continued the general treatment, and left a solution acid lactic gtts x, aqua ℥i, to be used as a gargle. He made a rapid recovery, and there was no more deposit of membrane. To those of your readers who have not used the acid in this way they will find it worthy of trial. I use a double-bulb rubber atomizer with rubber tip.

RESECTION AND EXPORTATION OF THE STERNUM.

The resection of the sternum so far has been executed in Italy by Rizzoli, Mazzoni and Pecchioli. Heidelfer has reported 25 cases of resection of small portions of the bone. Parona reports in the *Indipendente* a case of a woman fifty-six years old, affected for three years with necrosis of the sternum. An operation was performed with a complete success, as the bone was reproduced almost completely, although the woman was of such an age, and in a debilitated condition, and moreover, there existed a gangrenous condition of the edge where the periosteum was attached. The fact of the bony reproduction in this case is of an exceptional importance, as no one of those operated upon for resection of an extensive portion of the sternum was of such an advanced age as the patient of the author.—*Lo Sperimentale*.

AXILLARY HYPERIDROSIS OF NAKED PERSONS.

M. Aubert, in a paper read before the Medical Society of Lyons, asserted that under the influence of nakedness the axillæ become moister, and can be seen to change in redder color. M. Aubert believes that this phenomenon produces an elevation of temperature of the arm-pit caused by a general lowering of the temperature of the surface of the body. He, therefore, combats the habit of taking the degree of temperature with the axillary thermometer.—*Lyons Medical*.

Society Reports.

ARTICLE VIII.

CHICAGO MEDICAL SOCIETY.

The society held its regular semi-monthly meeting at the Grand Pacific Hotel, on the third Monday evening of July. Dr. D. W. Graham presided.

During the session, several valuable papers were read. The first was by Dr. H. D. Valin, who read a practical paper of much scientific interest, "Mechanical Equivalent of Animal Heat." The paper forms part of a manual of biology which he is writing, and the views expressed in portions of it by the writer differ from those of older authors. As the paper has been printed in this JOURNAL in its originality, further comment thereupon is thought to be unnecessary.

Dr. W. L. Axford read notes of a report of a case of bilateral and forward dislocation of the fourth cervical vertebra. The accident occurred to a little girl eight years of age, in March of the present year, and during the past few months she has almost entirely recovered from its effects. There was no injury to the cord, nor resulting fracture. The extent of the dislocation was estimated to be two-thirds of an inch. Drs. E. Andrews and J. G. Kiernan were called to see the case, and concurred in the diagnosis. The treatment adopted was the "let alone" method. She now keeps her head more fixed and forward than the normal position is, and it may be possible that in time inflammation of the membranes of the cord may occur, although at present no trace of this can be detected, nor has any paralytic symptom been developed at any time since she was hurt.

Dr. C. T. Fenn read a report of a case of "Acute Hepatic Abscess — Mistake in Diagnosis; Free Opening; Death and Autopsy." The following synopsis is here appended:

The subject was a German lad, *æt.* fourteen, who had been a blacksmith's apprentice. On June 16, 1883, he went home complaining of toothache, headache, pain in the right side and cold. On the second day, his bowels moved slightly from the effects of castor oil taken the day before; he had a feverish pulse and hot skin; offensive breath; pain in his head, neck and limbs, and especially under the right breast. *Tr. opii deodor.*, *chloratis kali* in glycerine and *aqua distil.* was given him, and *emp. cantharidis* 4x5 applied at night to the right side, across and above the short ribs.

On the third day, the fetor was corrected, and the pain in the side had subsided, but there remained a coated tongue, thirst, headache, tympanitis, rapid pulse, high temperature, and a tendency to cough that caused pain in his side. On the fourth day, he uttered a short cough with every breath. There was decided flatness (as Dr. F. thought) over the lower lobe of the right lung, extending from the nipple downward, and poultices were applied continuously from this time. Tympanitis was present, and a perceptible bulging of the right side. Constant resting on his back caused extreme discomfort, with perceptible shortening of the breath. On the fifth, sixth and seventh days, the temperature of the body was high; the pulse over 100 during the day, with increase at night. No tendency to spontaneous movement of the bowels; the urine was darker than normal, but skin and conjunctiva unaffected. He was obliged to sit in a chair to procure rest. In this position the heart was noticed beating between the second and fourth ribs. The dullness on the right side extended to one and a half inches above the nipple. Salicylate of soda was given him, which seemed to remove entirely the troublesome cough he had been having. There remained, however, a dark, moist coat upon the tongue, marked thirst, tympanitis and constipation, although large enemata had been introduced daily, which were retained. He loathed beef tea, but found satisfaction in tea, coffee, milk and lemonade. On the eighth, ninth, tenth and eleventh days the treatment was opiates, nutriment, expecto-

rants and poultices. On one of those days he evacuated the bowels copiously, the contents being dark, thin, and of disagreeable odor.

On the twelfth day, he seemed much improved. The fullness in the lateral chest and abdomen disappeared. He slept and ate with evident benefit; discontinued the poultices, but had to get an easy position by sitting in his chair by day. On the fourteenth day, there was an exacerbation of symptoms; the dullness which had been lowering in his side increased; he had chills, sweats, and extreme fever, especially in the evening. On the fifteenth day, Dr. D. T. Nichols was invited to see him for the purpose of assisting in surgical interference, should the diagnosis be confirmed, which was "pleurisy with effusion." The aspirator was used, at a point about a third of the way from the median line in front to the spine, and between the eighth and ninth ribs. Pus was directly perceived. A free opening was made, followed by a copious, sluggish stream of rather offensive matter; a drainage tube was inserted, and the external wound dressed with cotton soaked in carbolized glycerine. Before closing the wound in this manner, a finger was inserted in the opening, and a smooth, soft wall, apparently held together by strong trabeculae, was felt, and we concluded the lung was broken down at the site of the large abscess. The case seemed to be a hopeless one, considering the rapid development and quantity of pus that escaped at the time and during the night, which was at least a pint.

On the sixteenth day, he was greatly relieved. The cavity was thoroughly cleansed with carbolized water, but it would be returned almost clear. The patient was so relieved that it seemed a work of magic had been done. The dorsal decubitus was now one of relief, and his slumbers were quiet and restful.

On the eighteenth day, the external wound was clean and dry. The washings were still continued, but septicæmia had appeared. Supposing the case to be one of abscess of the lung, we thought it strange that this was the only constitutional symptom present, although he had a return of the chills, followed by extreme heat, and cleansing the interior was on the whole unsatisfactory the three subsequent days. While deliberating what new means we would devise, the patient had a rigor from which he did not rally,

and died on the morning of the twenty-second day, notwithstanding the free administration of quinine, other tonics, etc. etc., that had been given him in addition to the various other remedies.

Autopsy—twelve hours after death; body surrounded by ice, distended and purplish-yellow appearance of face, neck, chest and abdomen, as if decomposition were quite advanced. Incision from top of sternum to three inches below umbilicus; contents of chest exposed. The lungs were both healthy, and crowded up to occupy half their normal space. The heart was beneath the second and third ribs. The liver extended across the body on a line above the level of the nipples. The stomach and intestines distended, aided in forcing it high. The opening to the abscess was directly over the thickest portion of the liver, and about one-third of the organ seemed to be involved. The peritonæum was not inflamed; the spleen was enlarged and softened. No other observations were made, and it was not easy to determine how the abscess had its origin.

Dr. W. H. Curtis asked the author of the paper if diarrhœa had been present any time preceding his sickness. Answered, negatively.

Dr. D. R. Brower inquired if jaundice was present. Answered, no; excepting shortly after death when the surface turned yellow.

Dr. Axford inquired if the edges of the liver became adherent to the walls of the abdomen. Answered, no.

Dr. Valin had seen a case of abscess of the liver during the spring of last year. The patient (a man) had malaria twelve years previously. The inflammation lasted nine to eleven days, when the abscess was opened and eight ounces of pus removed. There was no jaundice nor diarrhœa in the case, but decided motion of the heart was noticed.

Dr. L. H. Montgomery asked Dr. Fenn what different method of treatment would have been pursued had they diagnosed the case to be an abscess of the liver? Answered, the treatment would have been substantially the same, and this was one reason why he reported the case, as well as the somewhat comparative infrequency of this trouble in private practice.

Dr. Curtis then recited briefly the histories of four cases of

hepatic abscess that he had met with in the temperate zone. The first occurred in an Indian boy, and pointed toward the ribs. A free incision was made, and there was evacuated a mass of lumbricoid worms as large as a fist, followed by a discharge of pus. In this case the worms caused the abscess. The boy recovered.

The second case occurred in a habitual drunkard who had chronic liver trouble. During one of his periodical sprees he was exposed to cold and dampness resulting in an abscess. Adhesions formed; an opening was made and a large quantity of pus discharged. He, too, recovered.

The third case was an old lady sixty-two years old. She also had marked jaundice, and marked symptoms of septicæmia. As purpura set in, in two weeks it ruptured into the lung, when she expectorated a good deal of pus. She rallied and got up. Then she was attacked with chills and fever, and became "hectic." It "gave way" again, this time into the stomach, so that she vomited the pus, but she finally made a good recovery. She had a cicatrix in her side since sixteen years of age, when a number of gall stones had been removed, over forty years ago.

The fourth case was that of a railroad president who had been under Dr. C's care for a fortnight. He diagnosed the trouble to be abscess of the liver, and wished to aspirate it. The friends of the patient desired counsel in New York, and he was accordingly taken there, when Dr. Hammond aspirated him, followed by a good recovery.

Dr. D. R. Brower exhibited the heart of a patient that had died of endocarditis, in which there was an extensive lesion and roughening of the mitral valve. The trouble dated from an attack of puerperal fever of a year ago. No possible abnormal condition of the heart could be detected. There had been no murmur present, and Dr. B. thought the valve was therefore perfectly sufficient in its action. No murmur could be detected after exercise. The patient had shortening of breath. She was anæmic and greatly emaciated. An embolism was also found. The rarity of the case when such serious lesions were present, was his reason for presenting it before the society. She also had chorea; and to him the case and pathological specimen had elicited much interest. The society then adjourned *sine die*. L. H. M.

ARTICLE IX.

CHICAGO PATHOLOGICAL SOCIETY. Regular meeting August 13, 1883.

The society was called to order by the President, Dr. Angear. The minutes of the last meeting were read and approved.

Dr. Fannie Dickinson was proposed for membership by Drs. J. E. Haynes and D. R. Brower.

The society then listened to the reading of a paper by Dr. Brower, entitled "Notes of a Fatal Case of Chorea, Its Pathology and Treatment."

This paper, which the author stated would subsequently be published in THE CHICAGO MEDICAL JOURNAL AND EXAMINER, gave a full and detailed report of a very interesting case of chorea, occurring in a female, with a fatal termination.

Dr. Brower, after reading the notes of the case, remarked his interest in the subject of heart lesions without murmurs. The case of Trousseau was the only one he knew of where lesions were present but no murmurs were observed.

The paper being before the Society for discussion, Dr. Lyman stated that in some cases a change of position would develop a murmur when not noticed in a sitting posture. Auscultation after fast walking or running, and sometimes in the recumbent position, would alone reveal a murmur otherwise undetected.

Dr. Angear remarked that as the murmur would depend upon the obstruction to the circulation or the roughness of the valves, if the disease had not caused this roughness or obstruction to any considerable extent, the sounds would be too delicate to be detected without special instruments. Temporary heart difficulty might cause embolism, which produced its effects after the heart had regained its tone. The point that chorea was a paresis of the nerves was a disputed one; this case supported the view, for, the brain being affected, chorea appears instead of paralysis or softening.

Dr. Lyman thought that the lesions could be predicted if any were found. Most cases recover. It was not common to find embolic obstruction as in above case; sclerotic patches some-

times appear in choreiform cases ; this case showed the characteristic lesion.

Dr. Brower thought that in recently reported cases lesions had always been found, generally in the left corpus striatum. In cases reported some time ago, there was not the care and pains taken in examination. Sixty-five per cent. of cases show heart trouble.

Dr. Lyman stated that if obstruction existed in the heart, and emboli were detached and carried to the brain, the right side of the brain would be liable to be affected. He then inquired what treatment seemed most valuable in the case reported.

Dr. Brower, in reply, stated that the general treatment was unsatisfactory ; that morphia, in $\frac{1}{2}$ gr. doses, would quiet the patient somewhat. He used chloral in 40-grain doses in vaginal injections. This had no effect, as also drachm doses of potassium bromide and 1-30 gr. doses of hyoseyamine. Chloroform was used once only as it oppressed her breathing.

In order to cease movement, she must sleep under morphia, in $\frac{1}{2}$ gr. doses, which had less effect than $\frac{1}{4}$ gr. to the ordinary patient. After a profound sleep, she had more movement than before. In ordinary cases of chorea in children, Dr. Brower gives Fowler's solution prepared without the lavender, in four drop doses, hypodermically, four times a day.

Children bear arsenic wonderfully well ; in one case of a child, gave eight drops three times a day, before the paroxysms were controlled. He had never seen any bad effects from its use. This statement was endorsed by Dr. Lyman. Strychnia he considered of less value. To the general treatment he always pays careful attention ; uses port wine in large doses generally with citrate of iron ; three or four wineglassfuls a day will generally produce sleep better than an anodyne. The iron should be given when indicated, and it generally is—preferably the milder preparations.

The use of the battery is difficult with children. Employs ether spray to spine with good effect.

The society then listened to a verbal report of a case of infantile tetanus, by Dr. E. P. Murdock. The age of the patient was five days. Dr. Murdock was summoned in the afternoon, and

arrived at 8 P.M. Found child in a convulsion. The spasm was a most violent one; the features cyanosed and emaciated, and the whole frame greatly shrunk in twenty-four hours, as stated by parents. The spasm soon relaxing, breathing became easier, but at touch the child again convulsed. A touch upon the chair upon which the child's bed was made would cause a convulsion; the abdominal muscles were rigid, and an irregular reddish spot appeared about the umbilicus, of the color of *eczema rubrum*; the bowels had been regular; the temperature 100° ; deglutition difficult. Gave tincture *physostigma*, chloral, and potassium bromide. Morning found the child weaker; prostration extreme; diaphoresis and diuresis profuse; child could not swallow the medicine. Called Dr. Angear in consultation, who advised the same medication administered per rectum. In the afternoon, the temperature was 108.5° , and death occurred.

Among the interesting features of the case were, 1. The spasm was excited by fanning. Justifiable force could not bend the arm or move the jaw, while complete relaxation occurred after the spasm. 2. The peculiar redness about the umbilicus. 3. The high temperature before death, 108.5° . He had never observed a temperature so high.

Dr. Brower then mentioned two cases of tetanus in the practice of Dr. Hosmer Johnson in one year, cured by large doses of quinine. Cases of "toy-pistol" tetanus had recovered under full doses of quinine. Dr. Jones, of New Orleans, reports recoveries from tetanus by use of quinine.

Dr. Lyman would ask if Dr. Murdock had noticed the condition of the bones of the cranium? Some one who had had considerable experience noticed a displacement of the cranial bones, the parietal overlapping the occipital. By replacing these bones, he had relieved a majority of cases of tetanus. This was the only allusion of which he had ever heard to this condition. It would be well to keep it in mind.

Dr. Murdock had noticed depression of the fontanelle, but not overlapping of the bones. The residence and surroundings, locality, etc., of the patient were of the better variety; no indication of foul air or filth of any kind.

The Society then listened to the final paper of the evening, by

Dr. Walker, upon the operation of "Lithotomy," end report of case in a child seven years of age. It was the left lateral operation, with a very favorable result.

The operation in boys, the author stated, presented several difficulties—

1. Owing to shortness of the perineum, the first incision is very near the scrotum.

2. The bladder lies high, rather above the pelvis in the abdominal cavity; so that the incision, if not upward, must be at least straight ahead—not downward.

3. If the incision should prove too contracted, the membranous urethra may be torn across with the finger, and push the bladder backward, the least disastrous result of which would be a traumatic stricture.

The paper being before the society for discussion, Dr. Lagorio remarked a case of a child, three years of age, as operated on. The child played about the floor on the third day, and was entirely recovered in three weeks.

Dr. Angear in 1879 saw Pollock, of London, operate on a four year old boy, using a straight staff, a pocket scalpel and small dressing forceps, exposing and removing a stone in as many moments, as he (the narrator) was using in description. The fuss was less than in extraction of a tooth.

An application for membership was then made by letter from Dr. Erichsen, Detroit, Mich., but as by constitution all members shall be residents of Chicago, the Secretary was requested by motion to so inform the gentleman.

Among those present were Drs. Angear, Brower, Beecher, Dobbin, Harper, Hayner, Lagorio, Lyman, Murdock, Newton, Patton, Tebbetts, Walker, and four visitors.

The Society on motion adjourned.

J. H. TEBBETTS, Secretary.

ARTICLE X.

CHICAGO PATHOLOGICAL SOCIETY. Regular Meeting, September 10, 1883.

The Society was called to order by the President, Dr. Angear.

Dr. J. E. Harper was elected secretary pro tem. The reading of the minutes was dispensed with.

The Society first listened to the reading of a paper by Dr. Charles Warrington Earle, entitled, "Cephalhæmatoma of the New-Born."

This condition, consisting in a soft tumor of the bone, is more common than usually supposed. It is generally formed on the right parietal bone. Prof. Byford, and one or two others, have reported a double hæmotoma. The seat of the tumor is between the bones and the periosteum, and is caused by the rupture of a vessel.

Ætiology.—We are taught that these cases are due to the pressure of a rigid os upon the scalp. It is liable to be confounded by—1st, caput succedaneum, a condition of œdema; 2d, hernia cerebri; 3d, vascular tumor; 4th, protrusion of the cerebral mass through an opening made by syphilis. The treatment consists in a judicious non-interference.

The paper being before the Society for discussion and remarks, Dr. Lydston stated that he had seen two cases, both over the left parietal bone.

In syphilitic children, meningeal hæmorrhage often occurs after a few days, and the child succumbs.

Dr. Earle then read a second paper, entitled, "Disease of the Spleen, and Report of a Fatal Case."

June 28, Mrs. C. had an ordinary attack of indigestion; five days after he saw her again, and found temperature 101° , pulse 80, abdomen distended, and the lady in considerable pain. June 30 she began to fail, and pulse was more rapid; July 2, rapidly failing, with all symptoms of purpura hæmorrhagica.

Autopsy.—Spleen enlarged, weighing 19 ounces, showing suppuration; microscopic examination showed fatty degeneration of the arteries.

Diagnosis.—Pernicious progressive anæmia resulting from a peculiar sepsis following sewer-gas poisoning. Dr. Earle regarded it as a rare case of splenic disease.

Dr. Angear would like to know whether the microscopist was an experienced one, and if his statement that the arterial coats had undergone fatty degeneration could be relied upon? This

being the case, hæmorrhage resulted and was followed by peritonitis which caused death.

Dr. Mergler had seen the post-mortems of four or five cases of pernicious anæmia, and in all the abdominal organs were very pale. In this case Dr. Earle stated that there was no discoloration noticeable.

Dr. Lydston recognized some similarity to cases of typhus fever as far as the splenic condition, ecchymoses, etc.

Dr. Earle asked if any one present had seen an autopsy in a case of leucæmia?

The society then proceeded to discuss the subject of "Sponge Grafting," so called. Dr. Angear reported a case of a lady about 40 years of age who had an ulcer on the lower extremity, of six years standing, and who had not menstruated during this time. At each period hæmorrhage occurred from this ulcer. After trying the usual methods without success, in desperation, tried sponge grafting. One week after applying sponge the entire ulcer had healed; but in about six weeks after the ulcer reopened, and all the new skin, with the exception of a few islets, sloughed off.

Dr. Newton reported a case in which six grafts were used, and had a good result.

Dr. Tagert thought it advisable to cover the entire surface with the sponge. Dr. Newton called attention to Dr. Hamilton's later method of using sponge in small pieces, in preference to large ones. Dr. Angear thought the sponge serves only as a protection to the delicate blood vessels and cells until the new tissue is formed, and hence the term "sponge grafting" is misleading.

Dr. Patton thought the results obtained from both skin and sponge grafting depends upon the establishment of new and independent foci for the production of plastic lymph.

The society, on motion, ajourned.

J. E. HARPER,

Secretary pro tem.

Domestic Correspondence.

ARTICLE XI.

OFFICE OF THE SECRETARY,
SPRINGFIELD, Ill., Aug. 13, 1883. }

Dear Sir:—I beg to call your attention to the following, without any comment other than the remark that nowhere in my report is there any claim that the Sanitary Council has done anything more than *supervise the inspections* formerly maintained by the National Board of Health. Extract from report of proceedings of the Louisiana State Board of Health, at its regular meeting in New Orleans, August 9th, 1883 :

“Mr. Booth, after eulogizing the press in general, said it sometimes assisted, whether knowingly or not, to circulate false and injurious statements. One of them was a report made by Dr. John H. Rauch, agent of the Sanitary Council of the Mississippi Valley, and published in a recent issue of the *Memphis Avalanche*.

“Mr. Booth characterized the statements and tenor of the publication to be false and libelous upon this Board, and he thought the Board should reply to it by some official act. However false such a publication, it will mislead honest people, and for that reason it should receive notice.

“Mr. Booth then offered the following :

“WHEREAS, It appears that Dr. J. H. Rauch, of Springfield, Ill., signing himself as Sec. S. C. M. V., has made a report to President Hadden, of Memphis, wherein it is stated that the late National Board of Health and the present Sanitary Council of the Mississippi Valley have so successfully conducted the Louisiana-Mississippi quarantine during 1883, that it is no longer

necessary for a Sanitary Council inspector to remain at said quarantine, and that consequently said inspector had been withdrawn, with much other alleged information touching the conduct, statistics, management and general work done and action had at said quarantine, intended doubtless to misrepresent the situation in so far as to lead to the belief that this Board was not, and the Sanitary Council was, attending to the health affairs of the State and valley as they stand affected by their relation to the Mississippi River and its commerce with tropical countries. Therefore, as such belief would be based upon erroneous grounds, to the detriment, as far as entertained, of the standing of this Board before the people, be it

“Resolved, That this Board protests against the statements of said Secretary Rauch as a tissue of curiously interwoven statistics, in themselves true, but perverted by a malignant intelligence to the uses of falsification and perversion, incredible in persistence and monumental in audacity.

“Resolved, That a copy of this paper be sent to the President of the Sanitary Council of the Mississippi Valley, that he may lay it before his association at their next meeting, with a view to the removal of said Dr. Rauch from an office which he puts to so poor or so bad a use.

“The resolution was adopted.

“The Board then adjourned.”

Full text of report characterized by Dr. Joseph Jones, President of the Board, and Mr. Booth, a member, as “false and libelous” in “statements and tenor:”

“Dr. Rauch, the executive officer of the Sanitary Council of the Mississippi Valley, has completed his report of the operations during the month of July, of the inspection service, formerly maintained by the National Board of Health, but now supervised by the council. From this it is learned that at the Mississippi river quarantine station, below New Orleans, there have arrived, during the quarantine season, seventy-three vessels from foreign ports. Of these, forty-seven were inspected up to June 30 under the supervision of the National Board of Health, and during July the remaining twenty-six were inspected under the supervision of the sanitary council.”

"Of these eleven were from ports infected by yellow fever at the date of departure, and three of them—namely, the *Berna*, July 3, the *Merchant*, July 16, and the *Buteshire*, July 17, arrived with cases of yellow fever on board. Among the remaining vessels one was found to have had yellow fever on board in Havana last season, and in seven other cases it was probable that they had been infected at some previous time."

"The sanitary condition of the vessel, crew, cargo, and passengers in twelve cases was good, and in the remaining vessels, with the exception of the *Berna*, *Merchant*, and *Buteshire*, which were infected, the report of the inspector was qualified. In all cases the vessels were subjected to a thorough general cleansing, purification of bilge, hold, etc., and disinfection with carbolic acid and copperas, and the cargoes were fumigated with sulphurous acid gas."

"Coffee ships from Rio de Janeiro were either not allowed to proceed up to New Orleans at all, or only after removal of cargo and thorough fumigation of the same."

"The arrival of the *Merchant* on the 16th of July, and of the *Buteshire* on the following day, both from Vera Cruz, with yellow fever cases, finally led the governor of Louisiana, on the 20th of July, to recommend to the Louisiana State Board of Health that no infected vessel be permitted to enter the Mississippi river, and that all infected vessels then at the quarantine station be removed out of the river at once, assigning the reason that their presence at that point had practically rendered the station an infected port, in dangerous proximity to New Orleans, and threatened a stupendous calamity to the Mississippi. At its meeting on July 23, the Board discussed this communication, and, on the 24th, Gov. McEnery issued a proclamation enforcing his recommendations, and declaring non-intercourse between Louisiana and Vera Cruz, Rio de Janeiro, Havana, and other infected ports."

"The infected vessels have been removed to Ship Island, and, for the first time in a number of years, the lower Mississippi is freed from the menace arising from the admission of yellow fever ships to the river."

"Immediately upon receipt of information of this action, the

request, previously referred to Governor McEnery to permit the Sanitary Council inspector to remain at the quarantine station, was withdrawn by telegram, and the inspector was relieved from duty as soon as the infected vessels and yellow fever patients were removed."

"It is remarked in this connection that while the National Board of Health and the Sanitary Council have been advocating for the past four years the exclusion of infected vessels from the Mississippi during the dangerous season, and the use of Ship Island as a refuge station for such vessels, the necessity for absolute non-intercourse has not been recognized. The plan proposed by these two bodies contemplated the maintenance of an inspection station at or near Port Eads. All vessels entering the river would here be subjected to a rigid examination. Those found to be infected would be compelled to go to the Ship Island refuge station; healthy vessels from infected ports would be subjected to such treatment as would render it safe to allow them access to New Orleans; while all others, if found in a good sanitary condition, would be passed without detention. In this way it was believed the public health could be properly protected without inflicting such serious injury to the commercial interests of New Orleans as a non-intercourse quarantine necessarily entails.

The executive committee of the Council, however, does not feel warranted in criticising any action which promises to secure the safety of the valley from an invasion of yellow fever.

During the month forty-five steamboats and other river craft, with an aggregate capacity of 44,219 tons, and carrying 2,532 officers, crews and passengers, were inspected at New Orleans, and furnished with the certificates of the Sanitary Council. On the Illinois Central and Louisville and Nashville railroads, at the same point, 144 freight trains bound northwise, and their crews, comprising 1,194 persons, were also inspected.

At the inspection stations at Fort Adams, Miss., and President's Island, Tenn., all north-bound vessels are now inspected, as well as those plying in the local trade and those clearing from New Orleans. The total inspections for the month at these stations comprise 123 steamboats, tows, barges, etc., carrying 5,352

persons. The sanitary condition of these vessels is reported as satisfactory, and an entire freedom from illness of a suspicious nature is noted.

An aggregate of 338 ocean vessels, river craft and freight trains, together with 9,342 officers, crews and passengers, has been inspected under the supervision of the Council during the month.

I send you this as a fair illustration of the methods and animus of the Louisiana State Board of Health. Very truly yours,

JOHN H. RAUCH.

To the Editor of the MEDICAL JOURNAL AND EXAMINER,
Chicago.

MACALINA.

A new remedy has been discovered, and, by the experiments already made, it seems to equal quinine in the treatment of malarial fevers. This new remedy is macalina, an alkaloid extracted by Dr. Doudé from the bark of a tree known in Yucatan as yaba. According to Dr. Rosado, the sulphate of macalina cures intermittent fevers in the same dose as quinine, and he prefers it to the latter for its surety and absence of symptoms (it only produces transient pains in the abdomen), and for being almost tasteless, and easily taken by children. It is to be hoped that the experiments will be continued, so as to ascertain if macalina can be considered equal to quinine.—*Il Morgagni*.

ANTISEPTIC CATGUT.

According to Kocher a truly antiseptic cat-gut is prepared by placing it for twenty-four hours in pure juniper oil, and then kept in 95 per cent. alcohol. This catgut is not absorbed before the sixth or seventh day. If the cat-gut is desired flexible, and not rapidly dried when exposed to the air, it is to be placed in glycerine for a day before being conserved in the alcohol.—*Lo Sperimentale*.

Reviews and Book Notices.

ARTICLE XII.—THE GYNÆCOLOGY OF THE ANCIENTS. By EDWARD W. JENKS, M.D., of Chicago, Ill. Translated from the English by PROF. DR. LUDWIG KLEINWACHTER.

The leading gynæcologists of America came together in the year 1876 and resolved to form a gynæcological association, whose workings might extend throughout the entire country.

As is usual in North America, the conception is followed by speedy perfection.

The association was organized, and it was resolved that annual meetings should be held in one of the larger cities and its proceedings published in a yearly volume known as the Transactions of the American Gynæcological Association. Six of these volumes have already appeared. They are an ornament to our professional library, interesting in the highest degree, and containing such valuable writings as might be expected from the coöperation of such men as Washington Lemuel Attlee, Fordyce Barker, Nathan Bozemann, William H. Byford, James Chadwick, Thomas Addis Emmet, Geo. Engelman, William Goodall, Charles Carroll Lee, William Lusk, Paul Mundé, Emil Nöggerath, Theophilus Parvin, Randolph Peaslee, and the renowned J. Marion Sims, T. Gaillard Thomas and others whose literary names are everywhere known.

Aside from the style and manner of the literary handling of matter (in which every nation differs), one encounters an essential difference between the Transactions and our similar literary productions. In this, each volume, up to date, contains as a leader a medical history or geographical work.

The earlier volumes give a full biography of Simon (of Heidelberg), Charles Buckingham, Randolph Peaslee, Marmaduke B. Wright, and others.

The fifth volume contains Engelmann's great work, with many neat illustrations, upon Aid During Chidbirth, by different writers of our own continent, and the following, sixth, a very noteworthy production from the pen of Edward W. Jenks, of Chicago, Ill., entitled "The Practice of Gynæcology in Ancient Times."

Here, as in many other respects, are we humiliated by the celebrated hyper-realistic North American.

With us the literature of the day, with one exception—namely, Virchow's Archives—holds aloof from any history of medicine, as well as medical geography; indeed, are often directly antagonists of same. We have, then, to thank principally the worthy manager of this journal that we cannot even now be made, in this matter, the reproach of other nations. We did neglect the history of medicine entirely.

We would not be so surprised, if the English or French cultivated the history of medicine, for these two nations possess more than a thousand years of glorious history, and one of such a nature as to inspire historical research.

But the North American is deficient in a national ancient culture, and likewise in ancient history, and in spite of this we see them encouraging and advancing the history of medicine. I consider this an indication worthy of notice. It is clear that these people are possessed with a desire to know what the ancients knew and did in order not to become bigoted—in other words, to seize completely upon the true spirit of medicine, whereby the so-called exact research became possible.

ARTICLE XIII.—A TREATISE ON THE MATERIA MEDICA AND THERAPEUTICS OF THE SKIN. By HENRY G. PIFFARD, A.M., M.D., Professor of Dermatology, Medical Department, University of the City of New York. 800, cloth, pages 851. Wood's Library of Standard Medical Authors, Feb., 1881.

This book possesses the advantage of an American authorship and will escape the appellation of literary theft, which applies to

a large proportion of the cheap medical works published now-a-days. The first part (pp. 117) contain the drugs, which are of use in the treatment of skin diseases, arranged in alphabetical order, and very methodically. First is given the effect of a drug on the integument when taken internally, then when applied locally, and thirdly, the diseases in which its use has been recommended, with reference to the page where such diseases are treated of in the second part. About 414 drugs are mentioned in the first part.

Part II. is devoted to the Therapeutics of Skin Diseases. After giving a short description of the disease and its etiology, the author enters into its methodical treatment at length, and gives in an appendix at the end of each article a list of all the medicines used in that disease, and references to part I.

A bibliography of 210 authors is contained in this volume, together with a formulary of over a hundred and forty prescriptions, all of which are expressed in the metric as well as in the old systems.

The favor with which Dr. Piffard looks upon homœopathy is traceable in his book, where he recommends in eczema the hundredth part of a drop of the tr. of *Rhus Toxicodendron*.

However, we are of the opinion, that although this treatise is inferior to the classical works of Duhring or of Hyde, yet it has an aim of its own in calling the attention of the readers to treatment, and will give the busy practitioner more information than a number of compendia issued within a few years past for the purpose of ready reference.

H. D. V.

ARTICLE XIV.—LEGAL MEDICINE. By CHARLES MEYNOTT TIDY., M.B., F.C.S., Master of Surgery, Professor of Chemistry and of Forensic Medicine and Public Health at the London Hospital; late Deputy Medical Officer of Health, and Public Analyst for the City of London, etc., etc.

Volume I.—Evidence; The Signs of Death; Identity; The Cause of Death; the Post-Mortem; Sex; Monstrosities; Hermaphroditism.

Volume II.—Expectation of Life; Presumption of Death and Survivorship; Heat and Cold; Burns and Scalds; Lightning; Explosives and Combustibles; Starvation, its Treatment. 8vo., cloth, pp. XXII-314 and XII-298. November and December issues of Wood's Library of Standard Medical Authors for 1882.

It is impossible to give more than an opinion of the value of this work, the third (and last?) volume being announced for another year's issue. This will appear more or less an abuse to some subscribers, and while it may forcibly retain some old ones, it may be cause that somebody will be deterred from subscribing to the series of 1883, which is thereby linked to that of the precedent year.

In the present volumes, medical jurisprudence has received an amplification which the intricacies of the law, as practiced in our days, necessitated. The work of the author is methodical, and, strange to say, his style is highly interesting, in spite of the dreariness of the subject. It would also appear that the basis of these lectures was laid by a colleague prematurely lost to the profession. However that may be, no one would look upon these volumes as a mere compilation, still less as the outgrowth of a few years of study, and it is very likely that they will become standards of medical jurisprudence. No one will regret his subscription to the library on account of these volumes being thrown in.

H. D. V.

ARTICLE XV.—A TREATISE ON THE PRACTICE OF MEDICINE, FOR THE USE OF STUDENTS AND PRACTITIONERS. By ROBERT BARTHOLOW, M.A., M.D., L.L.D. Third edition, revised and enlarged, 800, cloth, pp. xx-918, New York; D. Appleton & Co., 1882.

The Ideal Practice. Bartholow has accomplished in this work a result of which the whole profession had despaired. Decade after decade, editions after editions of antiquated works had rained on the profession of medicine in the United States, the treatment advocated in which would make a student smile. After a while it was thought that a translation of a standard foreign

work would supply something new, and it did: more infusions and powdered drugs and teas than our western drug-stores contain found their way through Ziemssen's *Cylopædia* into the students brains. It was a great relief to find that Prof. Bartholow possessed good common sense besides erudition, but for this very reason, his work is above criticism. It is one of those treatises the happy possessor of which would wish that he had at patent on, so that none of his neighbors could read it and learn. It is no wonder to us that Bartholow's practice has been left out of several medical colleges' catalogues; most likely its introduction in them would oblige some old professors to take many lessons of therapeutics as applied in our days. But the rapidity with which editions are exhausted is a surprise to no one acquainted with the book.

H. D. V

ARTICLE XVI.—THE ESSENTIALS OF PATHOLOGY. BY PROF. D. TOD GILLIAM, of Starling Medical College, Columbus, O. Philadelphia: P. Blakiston, Son & Co. 1883. P. 296.

In this busy era of investigation, discovery and discussion, in the ever widening fields of medical science, the immensity of the accumulation tends to discourage and confuse the young student. It is but fitting, then, that the most essential features of the science of pathology should be presented by one familiar with them, in plain, practical style—not to completely acquaint the student with the subject, but to bring its salient points within easy comprehension, increasing thus his interest in the subject. Hence the author of this work avoids in great measure the discussion of unsettled subjects, for the sake of preventing confusion in the mind of the student, and rendering more clear and distinct his conception of the generally accepted doctrines of to-day. There are thirty-three chapters in the book, treating briefly and clearly of Normal Histology, of Constructive and Destructive Processes in Disease; of Degeneration, Infiltrations, Metamorphoses, Death, Mechanical and Functional Derangements, Fever, Tumors, New Formations, etc.; with chapters on the pathology of the blood, and each of the different tissues of the human body. The general

practitioner will also find in this little 12mo. a convenient compendium of the current pathology of the day.

ARTICLE XVII.—COULSON ON THE DISEASES OF THE BLADDER AND PROSTATE GLAND. Sixth edition. Revised by WALTER J. COULSON, F.R.C.S., Surgeon to St. Peter's Hospital for Stone, etc., and Surgeon to the Lock Hospital. 8vo, cloth, pp. XXIV—393. New York: Wm. Wood & Co. 1881. July issue of Wood's Library of Standard Medical Authors.

Few authors have treated the subject to such an extent, and this book is cyclopædic in character. All the prominent writers are passed in review, their opinions analyzed, and their treatment epitomized. Litholopaxy is treated of in a chapter by itself, and is highly recommended. The surgical treatment of the various diseases is commendable throughout, but the medication advocated well represents the standing of the profession in Europe, and is not at all adapted for our more refined mode of prescribing. Such things are advocated as a large number of infusions, crude drugs, pure balsams, etc., which few patients could stomach, and very seldom is a prescription written out as it should be. This book is illustrated, printed in a clear type, and specially valuable for surgeons and practitioners who make a specialty of genito-urinary diseases.

H. D. V.

ARTICLE XVIII.—OCTAVO SERIES, STANDARD MEDICAL BOOKS: THE DISEASES OF WOMEN. By GRAILY HEWITT, M.D., F.R.C.P. Fourth American, from the last revised and enlarged London Edition. With 132 illustrations. Philadelphia: P. Blakiston, Son & Co. 1882. Two parts in one vol., \$1.50. Pp. 751.

"No subscribing nuisance is connected with this series; each volume is sold separately." This is a sample of the animosity which has sprung up between half a dozen medical publishers in this country since the Wood Library was started. The practice

of issuing paper covers is a rare thing in the medical literature of America, but it is quite common in France, and seems to naturally favor the poorer class of the profession. In the present case, for instance, a most valuable manual is placed in the hands of students at a nominal cost. THE JOURNAL AND EXAMINER had occasion once before to review very favorably this same work. Hardly any more can be said than that it is one of the best works ever written on the Diseases of Women, and answers the purpose of any other. The same can be had bound in cloth for \$2.50. The printing, the paper, and the illustrations are of the best quality. H. D. V.

INTERMITTENT FEVER TREATED WITH ELECTRICITY.

Electricity has been used by Frank, Borgini, Aldini and others; in these later times by Bossi, of Rome; by Vizioli, of Naples; by Shipulski, Krasnogladow, Deparquet, etc. Prof. DeRenzi, of Genoa, has also largely experimented with it, and has found that in the majority of cases, the fever is stopped, and frequently more promptly than with quinine. In nine cases, the author has had five complete cures, two bettering, and two with no success. They were treated with the continued and the faradaic current; the first obtained with 9 to 62 elements, and applied five to fifteen minutes along the spinal cord. The faradaic current has been more efficient than the galvanic. These experiments have confirmed the possibility of conquering intermittent fever with electricity; but so far, it has been impossible to ascertain why in some cases a rapid and complete cure is obtained, and in others an incomplete one, and what are the best means of application of electricity, and when it ought to be preferred to quinine.—*Annals Univerzali*.

THE interesting and valuable article on the Use of Lactic Acid in Diphtheria, by Dr. Lytle, was so dreadfully mangled by the printers that we republish it, and hope our readers will excuse the blunders we made in the former proof-reading.

Translations from Foreign Exchanges.

TRANSLATED BY A. LAGORIO, M.D.

ETIOLOGY OF CROUPOUS PNEUMONIA.

Drs. Griffin and Cambria, of Messina, have reported their experimental studies on croupous pneumonia. They have studied the blood in pneumonia, the liquids of cultivation of the bacillus of the blood, the sputum of pneumonia, and the action of the common irritants. From this series of observations and experiments they have drawn the following conclusions:

1st. That in the blood and in the sputum of pneumonia exists a special bacillus, different from Klebs' monads.

2nd. That the sputum of pneumonia, free of any saliva, when injected under the skin and in the trachea of rabbits and dogs, invariably produced in all a disease having the anatomical and clinical characters of acute septicæmia, always with a deadly result, and the blood of these animals, taken many hours (33) before death, when injected under the skin of another, rapidly killed him. The deadly action of the sputum was not modified by washing the mouth with an alcoholic solution of salicylic acid.

3rd. That while the saliva of pneumonia rapidly killed rabbits, in dogs it only produced an abscess in the place of puncture.

4th. That the defibrinated blood of pneumonia, whenever injected in the peritonæal cavity and in the trachea of rabbits and dogs, produced a variable elevation of temperature, less significant in the dogs, but never any form of pneumonia.

The fibrine of this blood, injected under the skin, killed a rabbit, but produced no action in a calf.

5th. That the liquids of various cultivations of the bacillus of the blood of pneumonia, injected under the skin and in the trachea, when this bacillus was in the various stages of vegetation, produced irregular elevations of temperature in rabbits and dogs, but no alterations of any sort in the lungs, nor in other organs. That the elevations of temperature were stronger in the rabbits when the liquid was of first cultivation, and the blood of these rabbits, containing the same bacillus, when injected in others, produced the same elevations of temperature. One drop of this liquid of cultivation, injected in the anterior chamber of the eye of a rabbit, produced a strong local suppurative inflammation, and death by septic infection.

6th. That the bacillus of the system and of the blood of pneumonia is transmitted always to inoculated rabbits and dogs, in whose blood it can be found, in a moderate quantity during life, and increases after the death of the animal. But this bacillus, transmitted in the blood of the animals, does not produce a croupous pneumonia, and its existence in the blood of pneumonia is to be considered a secondary fact; it is probably introduced in the lungs of pneumonia patients by the air, is rapidly and abundantly multiplied, and passes into the blood.

7th. That strong ammonia injected in small doses through the trachea in the lungs of dogs, and especially if previously infected with liquids of cultivation and with the blood of pneumonia, invariably produce a form of croupous pneumonia, and always lobar if the animal lived for a few days. A precedent infection with materials derived from pneumonia does not establish any predisposition in the animal; therefore the ammonia does not act in these cases as a cause simply occasional, but is capable, *per se*, of producing a true lobar croupous pneumonia. In our judgment, croupous pneumonia is not a disease of infection.—*Giornale Intern. delle Scienze Mediche.*

ALBERTONI—RESORCIN.

Resorcin, having a coagulating property for albuminoids, is recommended as a caustic for diseased tissues. When crystallized

its cauterizing action is as strong as nitrate of silver, without pain, and without leaving colored cicatrices. Weak solutions are used to medicate wounds. It is employed in solution as an injection in diseases of the bladder. A solution of five per cent. of resorcin, used two or three times, is sufficient to cure any acute vesical catarrh, most often caused by gonorrhœa. In chronic conditions, the strength of solutions is 5 to 10 per cent.

Cutaneous affections are frequently cured by its use, as erysipelas, pemphigus, rupia, lepra. Resorcin is extremely useful in poisoned wounds by animals, or in lesions by instruments infected with cadaveric poisons.

Concentrated solutions can be employed to wash suppurative cavities and canals of the body, as the vagina; the œsophagus; the antrum of Highmore; the sinus frontalis.

Resorcin in a form of ointment (resorcin-glycerine-vaseline) acts with rapidity and surety in syphilitic infiltrations and ulcerations, in soft or hard sores, and in phagedenic ulcers of the genital apparatus.

It is used in gastro-enteritic affections, as cholera infantum, septic enteritis, dysentery, typhus. Audeers recommends resorcin in a solution 1-5 per cent., as a wash in chronic diseases of the stomach, because it is less poisonous than phenol and salicylic acid, and is hemostatic.

The antipyretic action of resorcin has been well studied by Lichteim and by Jänicke. According to Jänicke, doses of 0.50 every half hour, to 4 grams, lower the temperature from 1 to $1\frac{1}{2}$ degrees C., which lasts two or three hours without causing any disturbance. The lowering of the temperature rarely lasts more than two hours; sometimes the temperature rises higher than the primitive limit.

To prepare resorcinated gauze, take 15 grams of resorcin, 450 grams of alcohol, 150 grams of glycerine, to every kilogram of gauze. The resorcinated lint is prepared by taking 30 grams of resorcin, 100 grams of alcohol, and 70 grams of glycerine, to a kilogram of lint. In cases of cholera infantum, it is given at a dose of 10-50 centgr. in an infusion of chamomile; as an antipyretic to adults, at a dose of 2-5 grams in a day.—*Lo Sperimentale*.

STATISTICS OF RESECTION OF THE STOMACH.

Ceccherelli has gathered in various journals the cases of resection of the pylorus executed up to to-day, and has reported the following, their authenticity being ascertained:

- 1st. Torelli—For wounds of the stomach, cure.—*Bulletino delle Scienze Mediche d' Bologna*, page 556, 1878.
- 2nd. Cavazzani—For a tumor in the walls of the stomach, cure.—*Gazzetta Medica Italiana, Provinzie Venete*, 1879.
- 3rd. Pèan—For carcinoma of the stomach, death.—*Gazette des Hôpitaux*, 1879.
- 4th. Rydzgier—For carcinoma of the stomach, death.—*Przegląd Lekarski*, 1880.
- 5th. Billroth—For carcinoma of the stomach, cure; death after four months from gangrenous peritonitis. This was the first case, and was much talked about.
- 6th. Billroth—For carcinoma of the stomach, death.
- 7th. Billroth—For carcinoma of the stomach, death.
- 8th. Wölfler—For carcinoma of the stomach, cure.
- 9th. Billroth—For carcinoma of the stomach, cure.—*Wiener Med. Woch.*
- 10th. A Surgeon of Arras—For a tumor of the stomach, death.—*Revue des Sciences Médicales*, vol. xvi, page 742, 1880.
- 11th.—Langenbeck—For carcinomatous stricture of the pylorus, death.—*Centralblatt für Chirurgie*, No. 20, 1881.
- 12th. Bardenheuer—For carcinoma of the stomach, death.—*Die Drainirung der Peritonealhöle*, 1881.
- 13th. Leuenstein—For a tumor of the stomach, death.—*Centralblatt für Chirurgie*, No. 29, 1882.
- 14th. Lücke—For carcinoma of the stomach, death.—*Deutsche Zeit. für Chirurgie*, 1882.
- 15th. Rydzgier—For a tumor of the stomach, cure.—*Centralblatt f. Chir.*, 1882.
- 16th. Hahn—For ectasis of the stomach, death.—*Centr. f. Chir.*, 1882.
- 17th. Czerny—For a tumor of the stomach, cure.—*Arch. f. Klin. Chir.*, 1882.
- 18th. Czerny—For carcinoma of the stomach, cure.

19th. Langenbeck—For carcinoma of the stomach; including also the stomach, death.—*Centr. f. Chir.*, 1882.

20th. Gussenbauer—For carcinoma of the stomach, death.

21st. Esmarch—For ulcer of the stomach, cure.—*Petersen Inang. Dissert.*, Kiel, 1882.

22nd. For carcinoma, death.—*British Med. Journal*, 1882.

23rd. Caselli—For partial stenosis of the orifice of the pylorus caused by carcinoma, death.—*L'Italia Medica*, 1882.

In these twenty-three cases collected by the author, nine cures are numbered; it is valuable to notice that death in the most cases occurred in a few hours after the operation by shock. In the last surgical congress held in Berlin, Billroth said that the greatest danger resided in the casual lesion of the pancreas. He also said that better results will be obtained in cases of dilatation of the stomach, and pyloric ulcers, than in carcinomatous stenosis of the pylorus.—*Lo Sperimentale*.

SULPHO-TARTRATE OF QUININE GLYCYRRHIZATED WITH COFFEE.

Dr. C. Pavesi says that in therapeutics every novelty provokes enthusiasm, and often the majority of physicians receive with benevolence any unusual remedy, provided it be *in mode*, and is eulogized by the journals. He does not love the empirical multiplicity of remedies, nor the poetry of some curative methods which fall before the criticism of experience. Frankly speaking, the sulphate of quinine, of all the alkaloids of the barks, is the oldest, and the most used in the medical practice of all nations. Considering that for its intense bitter taste it cannot be administered to many persons, and especially to children, he has masked the bitter taste with licorice root and toasted coffee, without in the least subtracting its precious therapeutical effects. The following is the method of preparation:

| | |
|-------------------------------------|----|
| B. Sulphate of quinine, parts | 1 |
| Tartaric acid, " | 1 |
| Powd. of licorice root " | 5 |
| Powd. toasted coffee, " | 25 |
| Water, Q. S. | |

The coffee and the licorice are mixed with sufficient hot water; the obtained liquid, limpid and brown, is evaporated to a syrupy

consistency; then are added the sulphate of quinine and the tartaric acid, well mixed and dissolved; and again the whole is evaporated to dryness by slow heat so as not to alter the aroma of the coffee and the other immediate extractive principles. Being hygrometric, is kept in ground bottles. *Properties*: The sulpho-tartrate of quinine glycyrrhized with coffee is a brownish powder resembling slightly coffee; it is of a bitter-sweet taste not disgusting, soluble in water. Tested with the proper re-agents the quinine is detected unaltered. It is to be administered in all the morbid affections, where quinine is indicated, especially to children. The syrup of sulpho-tartrate of quinine with licorice is prepared by dissolving in the decoction of coffee and licorice fifty parts of sugar and one part of sulphate of quinine and tartaric acid; then is evaporated by slow heat to the consistency of a thick syrup. It has a sweet taste, slightly bitter, very convenient for children. Every twenty-three grams of syrup contains about half a gram of sulphate of quinine, and as much tartaric acid.—*Gazzetta Medica di Torino*; *Il Morgagni*.

IODOFORM IN LUNG AFFECTIONS.—Prof. M. Semmola again calls attention in the *Giornale Internazionale delle Scienze Mediche* to the good effects of iodoform obtained in caseous broncho-alveolitis. He does not pretend to have discovered a specific for incipient tuberculosis, or for any caseous process of the lungs. He has been the first to advocate iodoform in these affections, and having obtained most excellent results, he warmly begs his colleagues to try it. According to his clinical experiences, the treatment with iodoform exercises in caseous broncho-alveolitis, or in incipient phthisis, the following effects: The expectoration diminishes rapidly and considerably. At the same time the cough lessens—becomes less distressing, probably on account of the local anæsthesia produced by the remedy. The products which exist in the bronchi or in the cavities are disinfect. The fever progressively lessens, for the remedy disinfects and diminishes the putrid substances, which become absorbed by the softened parts. There is also a bettering of the local process, and in some cases is noted a beginning of a cure. Evidently the general state of the patient is improved, and in

cases of caseous broncho-alveolitis in the first stages, a complete cure can be obtained.

Equally good results have been produced in bronchial catarrh, asthma, bronchiectasis, etc., all of which have been vouched for by Dr. Ciaramelli, Prof. Bufalini and Dr. Rumun, who have published them in the *Siècle Médical*. The daily dose is 5 centigr. to 40-50 cgm., and is to be regulated according to the tolerance of the digestive organs and the nervous system. The pillular form with the extract of gentian is to be preferred. Dr. Semmola gives small doses every hour. When the gastro-enteric apparatus is not in good condition, the iodoform is inhaled with the essential oil of turpentine three to four times a day.

COBWEB IN INTERMITTENT FEVER.

Oliva has published in the *Gazette Médicale de Seville* statistics of twenty-six cases of intermittent fever of a quotidian and tertian type, cured with the tincture of cobweb. This medicament is prepared in the following manner: Having gathered a quantity of cobwebs, it is shaken sufficiently to separate the powder that it contains. This powder, of a grayish color, without smell, tasteless, is insoluble in water, and little soluble in alcohol. It is just the alcoholic solution which is used. The author has administered it frequently at a dose of two grams to adults, and of a gram to children. A boy seven years old took thirty grains of it in a few days, without experiencing the least phenomenon that could be attributed to the remedy. According to Dr. D. Delgado y Ramos, the dose of three grains has produced symptoms of gastric intolerance and a marked cephalalgia.

Generally, two doses are sufficient to arrest the paroxysms. One hundred and nineteen observations have been published, and from these the following conclusions can be drawn: That the cobweb is an agent capable of curing palustral fever of a quotidian or tertian type. It is of no benefit in the quartan form. That when administered in a dose of two grams to adults and of one gram to children, it usually stops the fever at the second paroxysm. That its action being less rapid than that of sulphate of quinine, it should not be given in pernicious fevers. That its want of taste ren-

ders it of more easy administration than quinine, especially to children.—*Il Morgagni*.

RESORCIN IN DIPHTHERIA.—Dr. Wm. Lee said he had recently had ten cases of diphtheria in the vicinity of Perkin's Square, the oldest subject being six years, in which he had found the following prescription very efficacious, a small quantity being placed upon the back of the tongue every half hour: *R.* Resorcin., gr. x; acid. tannic., \mathfrak{z} i; acid. salicylic., \mathfrak{z} ss; acid. boracic., \mathfrak{z} ij; sulph. flav., \mathfrak{z} ss. *M.* It is remarkable how rapidly the membrane becomes softened by it. An emetic is also useful because swallowing of the membrane causes irritation of the stomach. He objected to mopping the throat, which he thought did more harm than good by abrading the tonsil. He also gives the resorcin internally, as: *R.* Resorcin, gr. xxiv; aquæ, \mathfrak{z} vi. *M. S.* Tablespoonful every four hours for an adult. It acts as a tonic, but he also gave whisky and food. The cases were very malignant. In one the throat trouble disappeared, ear-ache set in and the child died of otitis media.—*Maryland Med. Journal*.

AMERICAN ACADEMY OF MEDICINE.—The annual meeting of the Academy will be held at the New York Academy of Medicine, 12 W. 31st street, New York, on Tuesday, October 9, (three o'clock P. M.), and Wednesday, October 10, 1883.

RICHARD J. DUNGLISON,

Secretary.

THE present number contains an account of the fatal illness of the promising young Dr. Frank L. Rea, and also contains his maiden contribution to medical literature.

Selections.

REMARKS ON INTRA-PELVIC INFLAMMATION IN THE CHRONIC FORM.—By W. H. BYFORD, M.D., of Chicago, Professor of Gynæcology, Rush Medical College. (Presented to the Section on Obstetrics and Diseases of Women of the American Medical Association.)

The terms parametritis and perimetritis are erroneously supposed by many to include the whole subject of intra-pelvic inflammation. These terms are misleading, because as now often used they present to the mind the idea that all cases of inflammation not confined to the uterus must belong to one or the other of these.

Actual observation teaches the important fact that perimetritis and parametritis generally exist together, and that they are usually complicated with inflammation of the uterus, and not infrequently the ovaries and fallopian tubes are involved. When we use the terms perimetritis and parametritis, if anything like a definite diagnosis is made we ought to understand that the greater *intensity* of lesion is manifested in one of the tissues, but that inflammation extends to the others also. It is apparent, therefore, that to determine the tissue in which the inflammation is located is often difficult, simply because uncomplicated cases are extremely rare.

The complexity of the lesions of the pelvic organs and tissues might be inferred from the almost absolute unity of the vascular and nervous supply, and the fact that the genito-spinal center is the common controlling influence.

I make these general remarks upon the pathology of intra-pelvic inflammation, as an introduction to what I have to say of the

various forms of its manifestation in different organs and tissues within the pelvis.

The more obvious conditions of chronic parametritis are:

First.—Suppuration, or chronic pelvic abscess, located more frequently, but not always, in the broad ligament, the consequence of cellulitis. Chronic purulent accumulations are often found also behind the uterus, and are doubtless the result of local peritonitis.

The chronic pelvic abscess is generally the sequel of acute inflammation, and attains chronicity from the imperfect evacuation of the pus after acute inflammation has terminated in suppuration. The discharge in these cases may be continuous, but the suppurating cavity, in not being completely evacuated, is consequently not obliterated.

The evacuation is deficient sometimes because the outlet is through a tortuous canal; at others because the termination of the canal is in the rectum or bladder. The muscular fibers of the walls of these receptacles, after a certain amount of pressure is taken off by partial evacuation, contract around the opening, and do not yield until the accumulation renews the pressure sufficiently to overcome their resistance. These processes of partial evacuation and accumulation are repeated indefinitely. Again, temporary interruption of the purulent discharge may be caused by the distal extremity of the evacuating tube being higher than some portion of the suppurating cavity.

If the abscess is located in the connective tissue, the elasticity of that tissue will very materially diminish the size of the suppurating cavity each time the evacuation takes place, and eventually may entirely obliterate it. It does not always do so, however. The sufferings experienced by the patient in these cases consists in pyæmic and septic symptoms, resulting from the resorption of the pus and debris of decomposing material contained in the cavity. While the vital energies of many patients will sustain them until the process of evacuation is completed, others will die from exhaustion.

The remedy in such cases is found in surgery, and consists in making a more direct outlet through the vagina, large enough to at once completely evacuate the pus and enable the surgeon to

cleanse and disinfect the cavity. Where the evacuating canal is tortuous or too small it may sometimes be dilated with instruments until the cavity can be evacuated and washed out. Where the pus is accumulated in a sac formed in the peritoneal cul-de-sac behind the uterus, the difficulty will not be so easily overcome by enlarging the opening, as the pyogenic cavity is not surrounded by elastic tissue, as in the broad ligament. It will, as a consequence of this latter fact, require a longer time to fill up by granulation. In such cases we may hasten granulation by stimulating the cavity with injections of a weak solution of permanganate of potash, swabbing it out with iodoform or some other stimulating remedy. A cavity situated in this position will bear such stimulation better than one situated in the broad ligament. In cavities thus located we will often find decomposing coagula the remains of a hemothorax, the most common origin of abscesses in this part of the pelvis.

The suppurating variety of intra-pelvic inflammation may, however, be primarily chronic, and never rise above that grade.

In such cases the inflammation persists for several years. A considerable quantity of pus is formed without hectic or other symptoms of absorption, save a general feeble state of health. In these indolent abscesses the pus is formed and remains enclosed in the cavity for a very long time, with, in fact, very little tendency to evacuation. I saw one case of this kind in which I know from observation that pus was retained for three years. Upon first seeing the patient I was so well assured of the presence of pus in the right broad ligament that I proposed to puncture it. The patient, however, declined, and, residing in a distant city, went home. Three years afterward I made an opening in it, and removed a quantity of dirty putrid sero-pus. The patient was then in an advanced stage of phthisis, and died in a few months.

Another case I saw with Dr. T. D. Fitch. The patient assured us that the tumor had been discovered seven years before by her medical attendant, who told her she had cellulitis of the broad ligament, which had already suppurated. There were eight ounces of the same thin pus, as in the former case.

A cavity that has contained pus for so long a time has ceased to be pyogenic; its walls are thin and yielding over a large surface, and

when evacuated has no tendency to fill up again. These cases are sometimes connected with the tubercular diathesis.

Second.—Chronic parametritis is often met with when there is a decided tumefaction—in one of the broad ligaments, more frequently than otherwise—the remains of an acute attack, and, when not noticed or attended to properly, is a latent focus of phlogosis that may easily be elevated into the acute grade. We frequently meet cases of this kind among poor patients, who are obliged to exert themselves more than is compatible with the process of resolution. The consequences are that the woman has repeated returns of acute attacks until suppuration takes place. Sometimes in these or even more favored patients injudicious thoroughness and earnestness in an examination to ascertain the exact condition of the patient develops an acute inflammation that inflicts fearful suffering, and perhaps cripples the patient for life. Or, again, without sufficiently careful examination to ascertain the existence of this nodule of inflammation, irritating applications are made to the uterus, or a pessary is introduced that presses upon the locality of the effusion, or the womb is lifted high enough to make traction upon the diseased ligament, to give origin to acute inflammation. When the tumor is small, or in some remote part of the ligament, these mistakes are very liable to occur. There is no doubt also that in numerous instances these effusions are primarily the results of chronic inflammation, and have for their origin causes operating less violently. After the absorption more or less completely of the exudate in such cases, the broad ligament may be left thickened, rigid, shortened and irritable for a long time, and become the nidus for an acute attack.

Careful manipulation will enable us to discover any of these conditions without doing damage. They should always be the object of treatment, and removed before treatment for chronic metritis or replacement of the uterus is safe or justifiable.

The proper local treatment is hot-water injections and counter-irritation.

The general management is of the first importance, and consists of alteratives, tonics, feeding and rest. We should expect and require a long course of treatment for the cure of cases of this kind.

Third.—Chronic local *peritonitis* may exist (either as a *separate*

disease or a complication of cellulitis, ovaritis, and salpingitis) in the retro-uterine *cul-de-sac*, and over the broad ligaments retaining a displaced uterus in a fixed, retroversed or retroflexed position. The fixed position may be maintained by a somewhat solid cohesion of the opposed surfaces of the peritoneal covering of the uterus and the posterior lining of the Douglass pouch, or by the extension of bands of false membrane that permits of limited motion. When associated with general chronic pelvic inflammation it is but one item, is obvious and easily detected; but when local peritonitis is the only inflammatory condition it may require much care to diagnose it. When I find the uterus turned backward and resisting reasonable force, I suspect this form of chronic inflammation, and if manipulation for the purposes of restoration gives the patient much pain, I am confirmed in such suspicion. Enlargement of the uterus makes that organ, to a certain extent, difficult of replacement, and attempts to do so will generally cause pain; but even in such a case the presumption is that there is contiguous inflammation, and all the cautions to avoid aggravating that condition should be observed. An examination per rectum will give us valuable information as to the presence of retroversion and local peritonitis. By passing the finger through the rectum up the posterior wall of the uterus we will ascertain the condition of the peritonæum as to sensitiveness. With the evidence we may thus gain, and by gentle attempts to move or replace the uterus, we can make a pretty definite diagnosis. This inflammation may also exist in the *cul-de-sac* without the malposition of the uterus; in this case the tenderness behind that organ will be sufficiently diagnostic.

Sometimes we find local inflammation limited to the vesico-uterine reflexion of the peritonæum, which may interfere with reposition from ante flexion or anteversion of the uterus. In such cases we will find any effort to move the uterus attended with pain, and there will generally also be vesical irritation of an absolute character.

The discovery of peritoneal inflammation in however slight a degree should be a matter of caution to us against free manipulation for any purpose, and when complicating displacements, subinvolution or chronic inflammation of the uterus should be the main subject of our attention until entirely removed. I am quite sure

that the lack of sufficient care in this particular has been the cause of much needless suffering.

This remark, I think, is especially applicable to efforts at replacements of the uterus when that organ is retroverted or anteverted. I would therefore emphasize the direction, *not to try to replace* the uterus when such attempts give the patient decided pain. Counter-irritation, hip baths, and large tepid water injections are the main items of local treatment, while the general consists of alteratives, rest and tonics. The latter is of special importance. In many cases nourishment will be more valuable than medicine, as a large number of these patients are profoundly anæmic.

Fourth.—Another condition which accompanies a great number of cases, is inflammation of the ovaries and fallopian tubes. The inflammation of the ovary and tube is not often completely isolated, but is a complication of a more diffuse lesion of the broad ligament, including most of its structures. When ovaritis and salpingitis, one or both, are the only manifestation of existing inflammation, and stand apparently alone, there will be a history of preceding inflammation of the surrounding tissues.

The most important, as well as the most frequent of lesions, are indurated deposits of lymph, rendering the ligament rigid and deformed, and false membranes or trabeculæ that fix the ovary especially, and sometimes surround it in such a way as to constrict the nervous and vascular apparatus.

The ovary thus embraced in semi-organized exudation, if its structure is not completely destroyed, is so mutilated that its functions are greatly deranged, and performed with such difficulty as to cause intense local and general suffering.

According to Mr. Lawson Tait, the fallopian tubes are often the seat of chronic suppurative inflammation, which accompanies and outlasts the chronic inflammation of the ovaries. Mr. Tait regards the disease of the fallopian tubes as a more important factor in the reflex and local sufferings, as well as menstrual derangements, than that of the ovaries. While the position that the morbid condition of the fallopian tubes produces greater menstrual disorder than disease of the ovaries is a subject of controversy, it must be admitted that diseased tubes have a share in causing some of them at least, and I think Mr. Tait is right in

concluding that in cases of oöphorectomy it is quite as necessary for the relief of the patient to remove a diseased fallopian tube as an unsound ovary. This is not, however, admitting that the tubes in a healthy condition have any direct effect in exciting or in any way regulating the menstrual flow. It has long been a demonstrated fact that inflammation in the broad ligament, and other portions of the pelvic tissues, gives rise to pain during menstruation and causes general hystero-neuroses.

The symptoms of inflammation situated in the ovaries and fallopian tubes are, to a great degree, like those caused by disease of the uterus and perimetritic tissues. If there are any symptoms more than ordinarily distinctive of chronic ovaritis it is the suffering during the menstrual period, or the diminution or complete suppression of the menstrual flow.

Sometimes, indeed, connected with ovarian inflammation, there is complete amenorrhœa without any suffering at the periods, or any great amount of derangement of the general health. Gynecologists not unfrequently meet with cases like the following, viz.:

A young lady (27 years of age) at the age of 20 had a severe attack of pelvic inflammation that continued about three months, and, after its subsidence, for several months longer she was the subject of moderate pelvic symptoms.

When entire immunity had come about she observed that her menstrual flow was very much reduced in quantity.

For three years she enjoyed a fair degree of health and was able to exercise her vocation as a teacher with her usual comfort. At the end of that time, from exposure during severe exercise, she was again attacked with symptoms of acute pelvic inflammation, in all respects, so far as she could remember, similar to the first. From the inception of the last attack to the present time the menses have been entirely suspended, and yet she is now in the enjoyment of robust health.

From the history of this case I think we can fairly infer that both ovaries were the subject of inflammation of such a character and degree as to damage their structure sufficiently to render them incapable of performing their functions.

More frequently, however, the stroma is not so greatly changed ;

then the functions of the ovaries are performed with great difficulty, and attended with local pains and extensive and intense reflex suffering. To the symptoms of the latter condition the term ovarian dysmenorrhœa is correctly applied.

Rest, local depletion—in the earlier stages—and alteratives are the proper treatment. As the symptoms become chronic we may often derive much permanent good from the effects of one or more setons over the seat of the disease. In some of them the disease is so obstinate and the suffering so great as to justify the removal of the ovaries and fallopian tubes.

Fifth.—We may have cases of slight diffuse, or circumscribed phlogosis or hyperæsthetic hyperæmia, in which no exudation can be detected, and probably there are no palpable anatomical changes. In this form the nerves and blood-vessels are highly excitable because already under the influence of morbid agents that have been acting a long time upon them, but with a degree of intensity short of that condition called an exciting cause. They are in a state of predisposition.

Whether we are justified in speaking of this state of things as inflammation or not, it is quite certainly a departure from a sound condition, in a direction leading to that process. This is probably what authors mean by the term dormant or latent inflammation. It is an actual morbid condition, possessing the two elements, hyperæsthesia and hyperæmia, from which an exciting cause gives rise to the acute form of inflammatory action.

While the inexperienced may awaken acute suffering by injudicious manipulation or the employment of too strong or improper measures of treatment in some of the other forms of chronic inflammation to which I have alluded; it is this occult variety of disease that, figuratively speaking, betrays the most experienced, skillful, and cautious practitioners into methods of diagnosis and treatment that lead to attacks of acute inflammation, explosive in their suddenness and violence. There is no doubt in my mind that, in its subsidence, acute inflammation sometimes leaves behind it this smoldering susceptibility which lingers for months and even years as a menace to the unwary operator. Without the presence of this relict, or harbinger of acute inflammation, it would have been impossible for our ac-

accomplished countryman, Dr. George G. Engelmann, to collect so many terribly interesting cases as he reported to the Missouri Medical Society in a paper read before that body, and published in the September (1880) number of the *American Practitioner*. Many of these cases occurred in the hands of some of the most skillful gynecologists. We can not, therefore, say that they were the result of recklessness or ignorance.

Can we diagnose cases occurring under this division of the subject with sufficient accuracy to enable us to benefit by the knowledge?

Perhaps not always; but in most instances the careful practitioner will have his suspicions aroused by the history and the objective evidence generally obtainable. Judging from my own observation, I should say that the more dangerous cases were those in which this susceptibility was the result of previous attacks of acute inflammation. The history usually is one of inflammation of the pelvis and lower abdominal organs in months or years gone by. A disease, the nature of which may not have been well understood and treated, and vaguely termed inflammation of the bowels, typhoid or malarial fever.

These by-gone attacks sometimes present so few marked symptoms that their nature can not be definitely deduced from the history of them, especially when given by an ignorant patient. Most of the cases of the severe and sudden attacks, within my observation, have taken place where, it was fair to infer, this lingering susceptibility was the consequence of foregone acute attacks instead of a primary condition.

In such a morbid state, what would seem trivial exciting causes may produce terrible symptoms and disastrous consequences under even cautious management.

The untoward inflammation arising out of this susceptibility is also often the result of the too exclusive mechanical ideas entertained with reference to the management of affections of the uterus and other pelvic organs. Most of the pelvic organs lie within reach of the fingers, and instruments devised for the diagnosis and treatment of their diseases. We may thus be led to regard them as the proper subject for free manipulation, without regard to the fact that they are endowed with vital qualities. We may

not govern ourselves in our examinations sufficiently by the complaints of the patient, so much as the desire of finding every possible deviation from the natural position, size and consistence of every organ in the pelvic cavity.

Hence, thoroughness of examination in a mechanical sense is not an uncommon source of danger. In our treatment, the same preponderance of mechanical ideas leads to much mischief. A displaced uterus must be rectified by mechanical means alone, often without sufficient regard to other conditions. I have more than once seen cases where the uterus was fixed by effusion from inflammation, treated by forcible attempts at reposition.

Such attempts, I know, are recommended by men who ought to know better.

As a common practice, it would cause extensive suffering, and fail to be attended by any compensating benefits. Very few intelligent practitioners are so reckless as to disregard the actual existence of inflammation under such circumstances. But many times when the inflammation is so slight as not to give rise to noticeable effusion, and yet be attended with obvious tenderness, mechanical support is resorted to, and the patient exhorted to bear some pain for the good it will bring her to have the uterus kept in position. Such treatment is usually followed by bad results.

Now, to avoid mischief from the use of mechanical support in uterine displacements, the practitioner should consider all cases in which even slight perimetritic inflammation exists as unsuitable for the pessary. And when the sensitiveness characteristic of inflammation exists to a moderate degree, the uterus should not be repositioned. Other treatment should be instituted and persevered in until that sensitiveness is removed, before reposition and mechanical support are resorted to. The partisan advocates of the pessary may think this is unnecessary precaution; to which I would reply, that while skillful gynecologists may sometimes disregard this cautious view of the subject, and obtain tolerance of the pessary, even the best of them will sometimes do mischief enough to more than counteract the good they can thereby accomplish.

Our mechanical views as to the treatment of stenosis and flex-

ions of the uterus are apt to betray us into more dangers than those above mentioned. When this slight predisponent condition is present the use of the sponge, seatangle or other dilating tent is frequently followed by great danger; and it should be remembered that the use of the tent causes this predisposition to inflammation, so that in the consecutive application of tents in any case the second and third become instruments of extreme danger. It is true that in some cases the patient escapes when extra precautions and skill are used, but it is also true that in other cases, notwithstanding all just precautions, terrible results follow.

Now, in all this, I desire to be understood as incalculating the idea that the most accomplished—not alone the ignorant practitioner—may occasionally produce the damaging conditions so apalingly delineated in the paper by Prof. Engelmann above alluded to. Similar remarks are applicable to the use of the stem pessary, either with or without the incisions of the cervix uteri. In estimating the value of mechanical treatment of the uterus we must take into consideration these *exceptional* cases. No man is skilled enough to ignore the fact that he cannot resort to these measures without great hazard to his patient. His practice must be governed by the recognition of the *possible* consequences that may follow.

If not warned by his own observation, he should be forewarned by the researches and observations of others. I have been cognizant of numerous instances of disaster in all of the mechanical methods I have mentioned, and many deaths have resulted from the employment of some of them. These untoward cases are usually not published. They ought to be published, however, as danger-signals to warn the unwary of the hazards that beset their paths.

As the main object I had in view in writing this paper was to caution my associates against the dangers of converting a chronic pelvic inflammation into a disastrous acute form, I desire to append a summary of suggestions and inferences drawn from it.

1. The sometimes terrible effects of examinations or operations in the pelvis do not often, if ever, take place when there is not a perceptible predisposing inflammation. •

2. The inflammation may be so slight as to be easily overlooked.

3. It may be an original condition ; the sequence of an acute attack long gone by, or it may be the product of some immediately previous examination or operation, the effects of which have not subsided.

4. To avoid the dangers of acute inflammation we should, in making a first examination for pelvic disease, conduct it in such a way as not to give the patient much pain, and when she complains of much suffering desist at the sacrifice of completeness of diagnosis.

5. Complaints of much tenderness to the touch, or the use of instruments ; especially in parous women, is sufficiently diagnostic of inflammation upon which to base treatment for that condition.

6. If, with such tenderness, a thorough examination or an operation is imperative, it should be done under profound anaesthesia. There is no question, in my mind, that much less danger of ill effects is incurred in making examinations or operations on susceptible subjects, under the free use of anaesthetics.

7. Examinations or operations should not be repeated until the effects of the first have entirely passed off.

8. As chronic parametritis is a frequent complication of most of the morbid conditions of the uterus, it should be always suspected and its diagnosis be carefully considered in all cases of metritis.

9. When chronic parametritis is present, it should be the chief, if not the exclusive object of treatment until removed.

10. It is not safe to use the sound, sponge-treatment, or intra-uterine stem when there is perimetric inflammation.

11. It is especially dangerous to replace a displaced uterus, when it is bound down by inflammatory adhesions, by any means which will overcome its fixedness by force.

12. The use of pessaries, or supports of any kind which find their lodgement in the pelvis, is generally followed by disastrous consequences when there is even slight primitive inflammation.

13. All local treatment of the uterus must be conducted with the greatest care in all cases where this complication is present.

—*Journal of the American Medical Association.*

SOME OBSERVATIONS ON THE SALIVARY DIGESTION OF STARCH BY INFANTS. BY J. M. KEATING, M.D., VISITING OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, AND LECTURER ON DISEASES OF WOMEN AND CHILDREN. (Read June 6, 1883.)

Recently, in a late English work, I find the following: "During the first few months farinaceous food of every kind should be avoided, for the child's stomach (?) cannot digest it. Until the third month, or even later, no saliva is secreted, and without this floury foods cannot be assimilated." (Management of Infants, etc., by Howard Barrett.) This idea is so prevalent, and most of us have adopted the statement as representing the teaching of physiologists, that it has always been a matter of surprise to those interested in the feeding of infants to find, occasionally—especially among the poorer classes—infants fed upon corn-starch or other farina, almost to the exclusion of other food, and thrive.

At present, we presume that amylaceous material has of necessity to be converted by hydration into glucose, and for this reason I will not detain you this evening by indulging in the more speculative aspect of this subject, as to whether dextrine is capable of being absorbed, and which of the two ferments, that of the salivary glands or of the pancreas, is of the most importance. We have left this matter for further investigation. Prof. Albert R. Leeds, in his very able exposé of the subject of foods as regards their chemical constituents, made the matter so clear that in his table of the analyses we have evidently an accurate guide for the selection of foods in individual cases. But as the general belief is, that for infants of a tender age our choice should fall on that which contains a minimum quantity of starch and a maximum amount of vegetable albuminoids, or foods based on the Leibig formula, I deemed it valuable to institute a series of experiments, the result of which I confess were rather surprising, to test the saliva of infants, and to satisfy myself that the reason why some children apparently thrive on starchy food is not due to any change in the starch in its preparation, but depended upon contact with secretions well established in childhood.

In these tests we endeavored, as far as possible, to exclude all error. Corn-starch was used, it having been previously boiled, cooled into a paste, and portions of this were put into little linen bags, and given to infants to suck for two minutes at a time; Pavy's test was then used; the corn-starch paste exhibited before the operation no evidence of sugar change.

The linen was thoroughly boiled without discoloration of the solution. The bags with their contents were in each case thrown into a test-tube, and I submit for your examination the accompanying report.

To the resident physicians of the Philadelphia Hospital, Drs. B. F. Hawley and A. E. Roussel, I am indebted for assistance in this matter, as many of these tests were repeated a number of times by them, and great care was used to insure accuracy. My report includes the results obtained by experiments with the saliva of twenty-one children, varying in age from six days to seventeen months. The sugar change was noted in all but three—one of these was a babe six days old—whilst in another babe seven days old a marked reaction was observed. I feel satisfied that some infants do digest starch provided it is presented to them in a digestible form, and also that the salivary secretion which occurs earlier than we have been accustomed to believe, is allowed to come in contact with it, and I cannot but attribute the many statements to the effect that starchy food in small quantities is contra-indicated, to the fact that the secretions of the mouth are less liable to exert their influence when such food is administered by bottle and deposited in a surprisingly short time in the acid juices of the stomach. If starchy food, such as barley flour, oatmeal, rice, wheat flour, etc., is indicated on account of its highly nutritious qualities, which exist in all portions of the grain, and deemed advisable in the feeding of children, our few observations teach us that they should be administered in such a way as to insure their thorough digestion, and I am satisfied that the surprising results we witness, especially among the poor, of thriving table fed babes, is due to the mode of feeding more than to the fact that they are exceptional and astonishing cases. My table shows that the age of the infant is not a guide to the quality of its saliva, and we should bear this in mind when choos

ing the form of food. Thus, should we be called upon to regulate an infant's feeding, it would be important for us to test the saliva.

If we find a sugar change taking place we might incorporate with milk small quantities of one of the cereals, either barley, oatmeal, or wheat. On the contrary, should the test prove negative Horlick's or Mellin's food would be decidedly preferable. But while thoroughly convinced that the saliva is a most important element in digestion, we cannot overlook the fact that starchy foods have also to run the gauntlet of the pancreas, which organ if it possess in childhood relatively the same power that it does in latter years, is far more active than the salivary glands. We cannot then overlook the value of a microscopic examination of the stools of all bottle-fed children, for I believe that by this alone we can regulate the quantity of farinaceous food, detecting the proportion of the undigested residue.

| Child's name. | Age. | No. of teeth. | Food. | Reaction. | No. of experiments. |
|----------------|--------------|---------------|-----------------------------------|-------------------|---------------------|
| Smith | 6 days..... | 0 | Breast | None | 3 |
| Coyle | 7 " | 0 | Breast | Marked | 1 |
| Gallagar | 11 " | 0 | Breast | Well marked.... | 2 |
| Asbulson | 12 " | 0 | Breast | Marked | 1 |
| Perry | 2 weeks..... | 0 | Breast | ? | 1 |
| McErwin | 3 " | 0 | Breast and crackers | Well marked.... | 3 |
| Meenan | 3 " | 0 | Bottle | Perceptible | 2 |
| Conner | 4 " | 0 | Breast | Marked | 2 |
| Davis | 4 " | 0 | Breast | Marked | 1 |
| Beatty | 4 " | 0 | Breast | Very slight..... | 2 |
| Sumley | 4 " | 0 | Breast | Marked | 1 |
| McCann | 4 " | 0 | Breast | Very marked.... | 1 |
| Newhouse | 7 " | 0 | Breast | Very slight..... | 2 |
| Roberts | 2 months .. | 1 | Breast | Marked | 2 |
| Nerain | 2 " | 0 | Breast | Very marked.... | 1 |
| Boeuning | 2 " | 0 | Breast | Marked | 1 |
| | | 2 | Corn-starch and crackers | | |
| Hemileth | 4 " | | | Well marked.... | 2 |
| | | 1 | Corn-starch and crackers | | |
| Roach | 5 " | | | Slight | 3 |
| | | 2 | Breast and crackers | | |
| Hall | 8 " | | | Marked | 1 |
| | | | Corn-starch and crackers | | |
| Devine | 13 " | 4 | | Well marked.... | 1 |
| Wood | 17 " | | Condensed milk. | None | |

The following are my conclusions :

The saliva of some infants possesses the property of converting starch into glucose regardless of age.

The age of the infants cannot be taken as an indication of this property of its saliva.

When such a condition is found to exist, a small quantity of well-prepared farinaceous food is valuable as an element in the diet, incorporated with mixed cow's milk.

An examination of the stools of children so fed, would be a guide as to the quantity of starchy food to be used, and when farinaceous food is employed, slow feeding is probably preferable to the bottle—*Proceedings of State Medical Society of Pennsylvania.*

ON SOME POSTEPILEPTIC PHENOMENA.

In a paper read in the Section of Medicine, at the Annual Meeting of the British Medical Association at Liverpool, August, 1883, Julius Althaus, M.D., M.R.C.P. Lond., Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, makes the following introductory observations before describing a series of cases: "I wish to draw attention to certain either acute or chronic alterations of the mental faculties which have fallen under my notice, as direct consequences of epileptic attacks. I shall purposely exclude, in discussing this matter, any cases in which epileptiform seizures took place in consequence of gross organic lesions, such as tumour of the brain, chronic inflammation of the membranes and the gray surface of that organ, blood-poisoning of various kinds, and other diseases in which the convulsive paroxysms were only one symptom amongst many others; and I shall confine myself strictly to the consideration of those cases in which epilepsy occurred as a true neurosis, that still mysterious and unexplained functional disease of the gray matter of the brain, which is possibly owing to some kind of imperfect nutrition, but certainly not to any such structural alterations as would reveal themselves to our present means of research.

"The paper is based on an analysis of the cases of 250 epileptic patients which have been under my care in private and hospital

practice during a period of six years. Amongst these cases there were 89, or 35.6 per cent., in which no preceptible temporary or permanent alteration in the mental condition, which could be ascribed to the epilepsy, was to be ascertained; while in 161 cases, or 64.4 per cent., such alterations did occur. Of the 89 cases which escaped mental deterioration, 61, or 68.5 per cent., were instances of nocturnal epilepsy, while in 28, or 31.4 per cent., attacks took place in the daytime. All, however, which escaped were cases of typical convulsive attacks; while in all cases of loss of consciousness without convulsion, or *petit mal*, and epileptic vertigo or automatism, a more or less permanent mental alteration was induced. Among the 161 cases which were followed by mind-affection, there were:

123 cases (or 76.5 per cent.) of typical convulsive attacks;

26 " (or 16.1 per cent.) of *petit mal*; and

12 " (or 7.4 per cent.) of epileptic automatism.

"Among these patients there were 91 males, or 56.5 per cent., and 70 females, or 43.5 per cent. The ages of the whole series varied from 5 to 62; and when these were distributed over decades, it appeared that the decade from 5 to 15 was at the bottom of the list with 10.5 per cent.; while that between 15 and 25 headed the list with 24 per cent., the other decades being very nearly even, with a medium of about 16 per cent. The hereditary influence was marked in 66 cases, or 40.9 per cent. The nature of other predisposing or exciting causes, as far as they could be ascertained, did not appear to have exerted any special influence, since they were much of the same kind as in those cases in which the mind was not affected. I will, in passing, remark that I have excluded from the present considerations those cases which were apparently owing to injury to the head, syphilis, and masturbation, as these are of a complex character.

"In cases, therefore, which form the groundwork of this paper, are only such where epilepsy was the primary event, and where some mental disturbance was observed subsequently to, and as a direct consequence of, the attacks. There are two forms of this disturbance, viz.: an acute one, where mental symptoms occur soon after attacks, and disappear again after a certain time; and

a chronic form, in which there is a gradual and permanent loss of mental power consequent upon attacks.

“The characteristic feature of the acute form of postepileptic mental affection is its periodicity. Identical, or at least highly similar, symptoms are seen to occur year after year, and gradually become intensified, unless they be checked by active treatment. They do not always occur immediately after attacks, but occasionally a day or two afterwards, and last a variable time, but rarely longer than a week. After such an attack is over, the patient has mostly no recollection whatever of what has occurred.”—*British Medical Journal*.

A GOOD REMEDY OUT OF FASHION.

In an address on this subject, delivered at the annual meeting of the Metropolitan Counties Branch of the British Medical Association, by the President, Dr. C. J. Hare, late Physician to University College Hospital, the lecturer made some interesting observations on emetics and bleeding:

“It is not long ago that, in a very urgent case of bronchitis, I advised the administration of an emetic; when the gentleman whom I had been called to meet in consultation said, ‘Why, I never gave an emetic to an adult in my life.’ In former times it was not unusual, on the contrary, to commence the treatment of many diseases with the administration of a dose to procure vomiting; and although the remedy might then be given sometimes indiscriminately and according to routine, only those who have seen the effects of emetics, properly and judiciously given, can conceive the beneficial effects they sometimes produce. In the early stages of an attack of croup, it was by no means unusual to give an emetic of tartarized antimony or of ipecacuanha; and it is in accordance with the recorded experience of some of the best authorities and most practical men, and quite consonant with my own experience, too, that symptoms which presented the most certain augury of a severe attack were by these means cut short, the hoarse voice resumed its natural character, and the feverish symptoms were in a few hours relieved. I know quite well that

a great fear is entertained by some as to the depressing effects of emetics ; but the fear is theoretical, and not practical, and those who have had most experience in the administration of them best know how groundless the fear is. In diphtheria, too, I have seen the false membranes which are out of the reach of local remedies, and which the patients cough and cough in vain, and utterly exhaust themselves to get quit of, readily brought up by the action of vomiting, to the immense relief of the sufferer.

“ In suffocative bronchitis, the effect of emetics is sometimes magical, and by their administration in such cases not only is immense relief given, but I verily believe—I am certain—that lives are saved. You are called to a patient who has been ill a few days, with increasing dyspnoea ; she is sitting up in bed (I draw from nature), for to lie down is impossible ; she is restless, and tossing about ; the lips, and indeed the whole face, blue ; the eyes watery and staring ; the pulse quick and small ; the cough constant ; the expectoration semi-transparent and tenacious ; over every square inch of the chest, front and back, from apex to base, you find abundance of rhonchi ; moist, sonorous and sibilant ones in the upper part of the lungs, and muco crepitant or mucous *râles* towards the bases. Ammonia and stimulants, right and good in their way perhaps, in such a case are too slow in their action ; the patient is, in fact, more or less slowly, more or less rapidly suffocating. An emetic of twenty-two grains of ipecacuanha in an ounce of water is given ; in ten or fifteen minutes the patient vomits, and brings up a huge quantity of that tenacious mucus, and the whole aspect of the case is altered ; the distressed countenance is relieved ; the breathing is at once quieter ; and the patient is able for the first time for the past twenty-four hours to lie moderately low in bed, and to get some sweet, refreshing sleep. The patient is, in fact, rescued from the extremest peril, and in this case, and in many similar ones, too, I believe, from otherwise most certain death. Of course, in such cases the emetic is not given for its effect on the stomach, but for its collateral effect in mechanically clearing out the enormous amount of secretion which accumulates in the bronchial tubes, and which the patient is otherwise quite incapable of getting quit of ; and thus the half choking, almost asphyxiated condition is

changed for one of comparative comfort, and time is gained for the action of other appropriate remedies. No doubt the secretion may, and often will, accumulate again ; and I have not hesitated again in bad cases to repeat the same good remedy ; but it is a fact, and a very positive one, too, that, quite contrary to what those who have had no experience in the plan suppose, the system rallies instead of being more depressed under the action of the remedy."—*British Medical Journal*.

CASE OF DIABETES TREATED WITH CODEIA.

Dr. Bradbury narrated a case of diabetes mellitus, under his care in Addenbrooke's Hospital, benefited by the administration of codeia. The patient was a maltster, aged 69, who came under treatment in September, 1882, with a history that he had had no previous illness of importance, and who had been temperate, robust and remarkably stout. About two and a half years back, he had noticed that he passed an excessive quantity of water ; he then began to suffer from neuralgic pains about the left eyeball, slight dimness of vision, loss of flesh, hunger and thirst. He then came into the hospital for some months, and was treated with salicylic acid. After some improvement was maintained for about twelve months, early in 1882 he began to have a recurrence of the symptoms. In September, 1882, it was reported that vision had been entirely lost in the left eye, and much impaired in the right. Sharp darting pains had occurred in the limbs during the last three months, and had affected the lower limbs with great severity. He had also suffered from giddiness. There were signs of cataract in both eyes, with whitish patches in both retinæ, but no hæmorrhagic patches. The gait was peculiar, as he walked with short strides and some hesitation, and a difficulty in turning round. Sensation in the limbs was normal. Patellar, spermatic, abdominal and posterior scapular reflexes were quite absent. The urine had a specific gravity of 1037 ; it contained a large quantity of sugar, but no albumen. For seven days he was allowed the ordinary hospital diet, and no

drug was given; the daily average of urine was 84 ozs., and there was no change in the symptoms. For the next twenty days his diet was restricted to meat, greens, eggs, tea, brown bread, butter, and beef-tea, the daily average of urine being 52 ounces, and slight improvement being noted in the pain in the limbs. During the next seven days half a grain of codeia was given daily, and the daily average of urine was 48 ozs. Then for ten days a grain of codeia was given daily, and the average of urine was reduced to 45 ozs. From November 1 to December 8, the dose of codeia was one grain and a half daily, and the average urine was 40 ozs. During this period the pain was to a great extent lost, and the sight improved in the right eye, and perception of light returned in the left. After December 8, until he left the hospital, he took two grains of codeia daily, and passed on an average 33 ozs. of urine. During the whole of his stay in the hospital, the specific gravity of the urine was scarcely at all affected, varying from 1034 to 1038, and his weight varied from 12 st. 9 lbs. to 12 st. 12 lbs., but was not affected by the treatment. When discharged, in January, 1883, the report was that the man had for some weeks been free from pain; the sight had improved to a slight extent in the right eye; that the absence of patellar reflex continued, and that the gait had not improved, though this latter symptom was attributed to the deficiency in sight. Dr. Bradbury said, in reply to the discussion which followed, that the case was especially interesting, on account of the presence of nervous symptoms, and the marked improvement in them and in the polyuria by the treatment adopted. He had only that day seen another case in consultation in which there was much the same gait, shooting pains in the legs, and a complete absence of the knee-phenomenon. In this case, there was a gouty history; and Dr. Bradbury said he had under his care a gentleman who had had several attacks of gout, had now difficulty of walking, and in whom the patellar reflex was totally abolished. In none of these cases was there any ataxy. A close relationship may exist between gout and glycosuria, and these cases usually ran a somewhat protracted course, quite different from the diabetes occurring in young persons in whom there was no gouty history.—*British Medical Journal*.

SEA-SICKNESS AND ITS PREVENTION. BY HENRY J. BENNET, M.D., Formerly Obstetric Physician to the Royal Free Hospital.

In his interesting letter on sea-sickness which appeared in the *Journal* of July 7th, Mr. Kendall mentions various modes of treating sea-sickness, but does not speak of its prevention. From twenty-five years' personal experience, and from that of scores of friends and patients, I think I may say that I have discovered a very simple means of preventing sickness, in most cases, in short voyages. This preventive remedy is merely the ingestion of strong coffee some time before embarking.

I discovered the influence of strong coffee quite accidentally. A quarter of a century ago I was traveling on urgent business from Paris to London, and on arriving at Folkestone found that I had an hour or more to dispose of. I went into a *café*, and ordered a cup of *café noir*, the strong black coffee frequently taken on the Continent, with sugar only; this cup I repeated. The weather was awful, the sea tempestuous; nothing but dire necessity would have induced me to start, and I expected to be ill in five minutes, being a wretched sailor. To my utter astonishment, I remained perfectly well throughout a tedious and very rough passage. Indeed, I think I was the only passenger on board who was not ill. This circumstance made me think that perhaps it was the strong coffee that was the cause of the immunity, and subsequent experience has proved that such was the case. To succeed, however, certain precautions are necessary. The coffee should be taken long enough before embarking to ensure its absorption—say one hour, if alone with sugar; about two hours and half, if with milk. Moreover, there should be nothing whatever in the stomach—nothing for the stomach to do. To prevent exhaustion, however, a good, easily-digested meal should be taken about four hours before embarking. The coffee, also, should be good and strong, unmixed with chicory; otherwise it produces no effect. If sickness ensue and food be thrown up, the conditions necessary, according to my experience, to secure immunity, have not been secured, and the non-success is not a real failure. I consider that an infusion of about an ounce and a half

of pure coffee-powder is about the quantity necessary. It should be infused (medicinally) in about four ounces of boiling water for ten minutes, say in a warmed mug or jug, poured off and drunk with sugar as *café noir* an hour before leaving, or as *café au lait* (with milk) two hours and a half before. It is best made at home, and put in a bottle, to avoid chicory or English wish-wash.

Contrary to the generally received opinion, I do not think that the stomach being full on going on board is a prevention against sea-sickness. In my experience I find that it promotes and causes it. The poor stomach, full of food, buffeted about, refuses to do its work, and in desperation rejects its contents. I have been at sea nearly a hundred times since then; thanks to the coffee, I have scarcely ever been sick on short journeys (under ten or twelve hours), and very many persons to whom I have recommended the plan have enjoyed similar immunity. The influence must be that of a brain and nerve tonic, which strengthens the sympathetic nervous system, and renders it less impressionable to liquid shocks. I have published elsewhere the opinion that sea-sickness is probably due, in a measure, to disturbance of the circulation by the irregular motion, and to its influence on the sympathetic nerves. All the blood in the body is irregularly banged about by the motion of the vessel in a rough sea. Animals at sea for the first time are as ill as ourselves, especially dogs, and it cannot be fear, for on land fear does not produce sickness with them or with us, unless very exceptionally.

On longer journeys, I advise travelers still to take the coffee in the same way, and then to lie down in their berths. The influence of a strong dose of coffee on the nervous system lasts for eight or ten hours. During this time the body may become accustomed to the motion of the ship. They had better, I should say, take no food, either liquid or solid, until the feeling of thirst or of hunger show itself. For the first (thirst), a mineral water, soda or Apollinaris, with or without brandy or champagne, may be sipped. For the second (hunger), *café au lait*, with or without a little bread, may be taken; and that agreeing, curry, as advised by Dr. Kendall, could be tried.

In the continued sickness of long voyages, many patients of mine have derived immense, and often permanent, relief from the

injection into the rectum at night of fifteen or twenty drops of laudanum, in an ounce and a half of warm water, to be retained, by means of a small elastic baby injection-ball. If not retained, it can be repeated in half an hour or an hour. Sleep is generally obtained, even in extreme cases; and during sleep the body may become accustomed to the motion, as will coffee. Some patients have told me, or written to me, after long voyages, that this mode of employing laudanum has saved their lives. I have proposed, as have others, the hypodermic injection of morphia; but I have no personal experience of its use, and cannot say whether or not it acts better than the injection of laudanum *per anum*. When on board ship in short passages, I am generally too fearful of personal sickness to be of much use to others, feeling it prudent to remain perfectly quiescent; and I have not made any very long sea voyages.

Probably strong tea, brandy, wine, indeed any powerful nerve-stimulant or sedative, would have the same effect as coffee if taken in the same manner—that is, sufficiently long before going on board to be absorbed, and to leave the stomach empty and quiescent.

Clearly, the usual non-success of remedial agents taken for sea-sickness is owing to the stomach itself refusing to absorb what is put into it, once sickness has commenced. A glass of pure water, instead of being absorbed in a few minutes, will often be thrown up an hour or more afterwards, just as it was taken. I have often known chloroform thrown up half an hour or more after its ingestion, perfuming the ship with its odor. The rectum is not sick, and has not lost its power of absorption.

A naval surgeon, who had passed a life at sea, once told me that what he had found of most benefit in confirmed desperate sickness, was drinking constantly warm or lukewarm water. A jug of warm water and a glass are placed beside the patient, who is told to swallow half a tumblerful when the sickness comes on. It is immediately thrown up, but easily, and by-and-by calm comes. The real remedy, however, is to stay on land, or to return there, if possible; but the coffee plan, judiciously carried out, has shorn the Channel of its horrors in my case, and in that of many others.—*Brit. Med. Jour.*

KUEMMELL'S MERCURIC BI-CHLORIDE ANTISEPTIC METHOD.*

—Corrosive sublimate, or, according to the more modern nomenclature, mercuric bi-chloride, is among the oldest antiseptic preparations whose superior anti-putrefactive properties were well known. But there seems to have been no disposition among surgeons to put it to practical use in the treatment of wounds, probably through fear of its well known toxic effects. Nor need one wonder at this when the maximum dose of the drug is taken into consideration, and the certainty with which alarming symptoms of poisoning are produced when this dose is exceeded. The first clinic in which the use of it was ventured in any shape was that of Von Bergman, of Würtzberg, where a gauze prepared with it was used instead of a carbolized gauze.

The credit of using it as a general antiseptic, both for purposes of irrigation and wound dressing, belongs to Kümmell, of Hamburgh, who, having his attention called to its powerful germicide properties by the labors of Koch, proceeded by a series of experiments to demonstrate in how far it might be made useful to the operating surgeon. Dougall, Billroth, Buchholtz and Sternberg, of the United States Army, found that in solutions varying in strength from 1 to 1,000 to 1 to 20,000 bacteria were killed and their further development checked. The bacillus of gangrene of the spleen, according to Koch and Pasteur, resists the action of all other antiseptics with the exception of that of the mercuric bi-chloride. In a solution of this latter of the strength of 1 to 1,000 Koch succeeded in destroying them entirely within a few minutes. In a solution of the strength of 1 to 5,000 their growth was markedly retarded.

Acting upon the possibilities which these experiments suggested, Kümmell proceeded to make a practical test of the applicability of the mercuric bichloride as an antiseptic wound dressing. Disappointed at the comparatively slight antiseptic effect of the five per cent. carbolic solution in general use for purposes of irrigation, he at first used a 1 to 5,000 solution of mercuric bi-chloride for the same purpose in Schede's wards in the Hamburgh General Hospital. He gradually increased the strength of

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the irrigating fluid to 1 to 1,000, and even to a one per cent. solution, without the slightest trace of dangerous symptoms supervening. The five per cent. solution of carbolic acid was used for the spray and as a bath for the instruments. The latter, if exposed to the action of the mercuric bichloride for only a few seconds, will become blackened by the rapid amalgamation upon their bright surfaces; nickle plating will not protect them from this injury. Enveloped as the head of the operator and his assistants are by the spray, a sufficient amount of the latter, were it to be even an atomization of a very dilute solution of the mercuric bichloride, might be productive of troublesome if not positively dangerous symptoms. It is evident, therefore, that for neither of the above purposes can the corrosive sublimate solutions be made available. In two patients treated with the one per cent. solution the constitutional effects of the drug appeared; in one salivation taking place, and in the other a diarrhoea, which latter was afterwards thought to be of a tuberculous origin. Recovery took place in both cases in a few days without the necessity of a removal of the dressings. Both of these patients had suffered previously from iodoform intoxication, suggesting a peculiar susceptibility to the action of antiseptics.

Sine the introduction of the mercuric bichloride solution as an irrigating fluid, Kümmell deprecates the use of sponges, except when absolutely required in the operation itself; the cheapness of the sublimate justifies its free use in cleansing the parts. The floor and the walls of the operating room are scoured and scrubbed with the solution, and no accident has yet occurred to either attendants or patients. After seven months use of the substance in this free manner, he avers that, with the exception of the two cases above alluded to, no ill effects whatever have been attributed to it.

In a person with an extremely sensitive skin the dressings of mercuric bichloride may, according to Kümmell, produce an eczematous condition of the parts surrounding the wound. This does not occur from a simple irrigation of the wound and the surrounding tissues; but when it does take place, which is rare, it arises from the constant contact of the wound and its neighborhood with dressings impregnated with the sublimate. In wounds

in which putrefaction changes have already occurred, the mercuric bichloride solution quickly banishes the odor and arrests the septic processes.

The dressings devised by Kümmell consist of sublimated gauze and cotton, sublimated silk, sublimated cat-gut, sublimated oil, and sublimated inorganic dressing materials. These latter comprise powdered glass, sand, coal ashes, asbestos, lint made from spun glass, and, for purposes of drainage, capillary threads of spun glass.

Sublimated gauze and cotton are designed to take the place of carbolized gauze and cotton. They are made hygroscopic in the usual manner, and then impregnated with the following:

| | |
|--------------------------|-----------|
| Corrosive sublimate..... | 10 parts. |
| Alcohol..... | 4,490 " |
| Glycerine | 500 " |

The moisture is pressed out with a clothes wringer. If a stronger solution of the corrosive sublimate is used, eczema and bullæ of the integument will be produced.

For sutures, sublimated silk is used. It is previously prepared as for carbolized silk, by Hegar's method, and then boiled for two hours in a one per cent. solution of the corrosive sublimate; it is then transferred to a one-tenth of one per cent. solution of the same, where it is kept ready for use.

For ligatures sublimated cat-gut is used. The unprepared cat-gut is first immersed in a one per cent. solution of the corrosive sublimate for twelve hours, and then firmly wound upon spools, and preserved in an alcoholic solution of half of the above strength, to which is added ten per cent. of glycerine. Cat-gut thus prepared is very flexible, and it is asserted by Kümmell will give perfect immunity against infection, whatever might have been the condition of the gut prior to its preparation.

Sublimated oil of the strength of one per cent. is employed for uniformity's sake. This oil, however, as shown by Wolfhügel and Knorre, of the Imperial German department of health, possesses no more powerful antiseptic properties than carbolized oil.
—*Annals of Anatomy and Surgery.*

THE ST. LOUIS MEDICAL SOCIETY AND THE REVISION OF THE
CODE OF ETHICS.

It will be remembered that at the late meeting of the American Medical Association, Dr. Pollak, of St. Louis, on behalf of the St. Louis Medical Society, moved the appointment of a committee to revise the Code of Ethics, which motion was promptly laid on the table. It now appears that this resolution was not authorized by the St. Louis Medical Society, and that Dr. Pollak presented it without consulting his brother delegates. At a late meeting, the St. Louis Medical Society repudiated and condemned the action of Dr. Pollak, with only two dissenting votes. The St. Louis Medical Society sits down upon Dr. Pollak, in this manner; On June 23, 1883, Dr. Atwood introduced the following, which the St. Louis Society adopted after some discussion:

WHEREAS, At the recent session of the American Medical Association, a preamble and resolution were offered for the consideration of said Association, purporting to represent the sense of the St. Louis Medical Society upon the propriety of preparing a new Code of Ethics, or altering and changing the existing code in accordance with the present relations of the profession; and

WHEREAS, In said preamble the assertion is made that "the Code has accomplished all it was designed it should, but at present many of its features are obsolete and not adapted to our wants. The necessity of an early revision is very apparent, is loudly called for in all parts of our land, and cannot be repressed much longer. . . . The time has come when the loud and very soon universal call will have to be heeded;" and

WHEREAS, The St. Louis Medical Society did not instruct, "That the committee be authorized to prepare a Code of Ethics which in their view will meet the wishes of the profession, and submit the same to the meeting of 1884;" therefore

Resolved, That the St. Louis Medical Society distinctly repudiates the statements contained in said preamble, and again expresses its fealty to the existing Code of Ethics as a time-honored and most suitable fundamental law of the profession, and specially deprecates any action calculated to reflect upon its loyalty to those principles which have heretofore secured immunity from the machinations of schismatics within or enemies without.—

Louisville Medical News.